

MAY 19 '33

The University of the Philippines

Bulletin No. 15

JANUARY

1933

GENERAL CATALOGUE 1932-1933

ANNOUNCEMENT
1933-1934



MANILA
UNIVERSITY OF THE PHILIPPINES PRESS
1932

The University of the Philippines

Bulletin No. 15

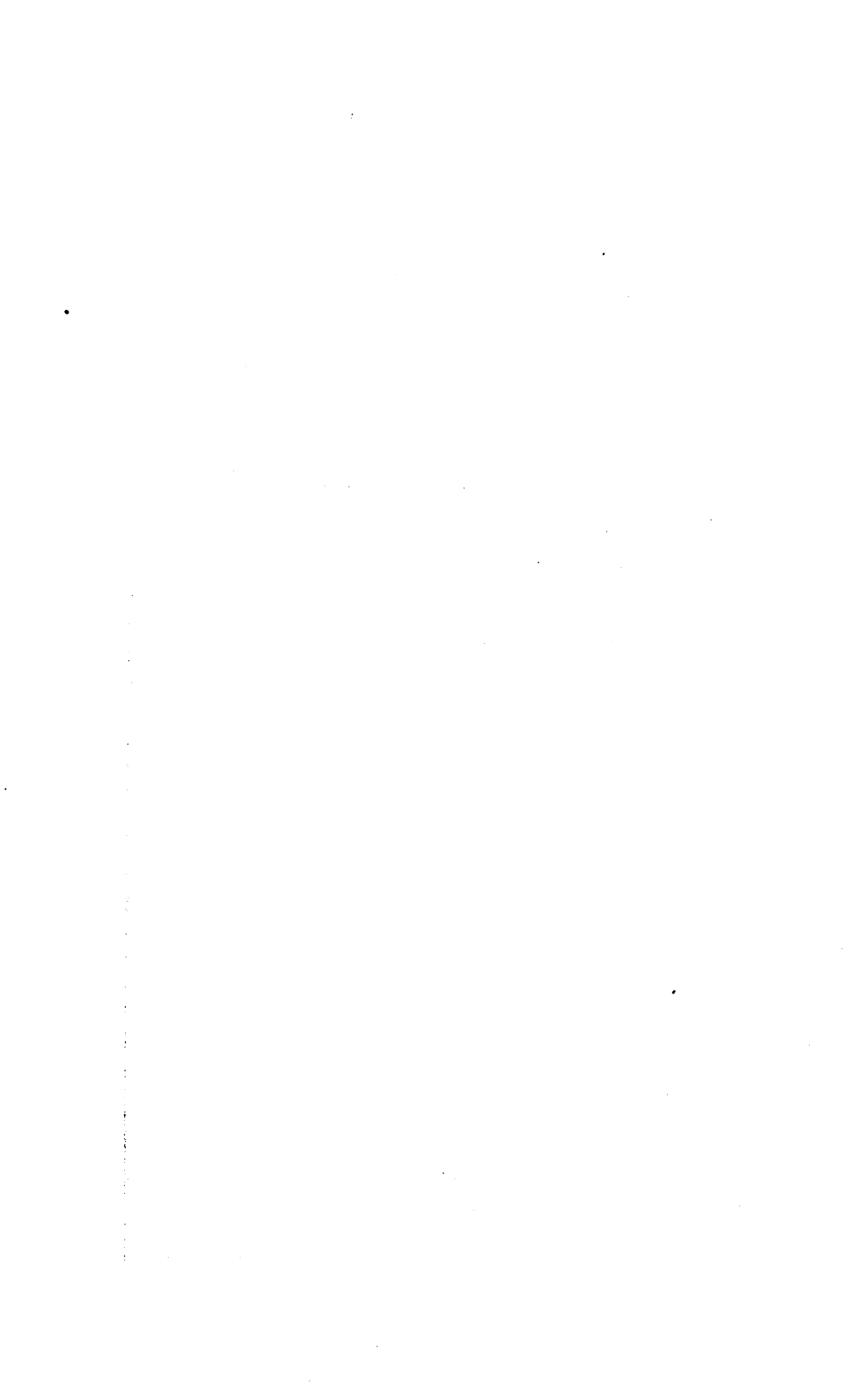
JANUARY
1933

GENERAL CATALOGUE 1932-1933

ANNOUNCEMENT
1933-1934



MANILA
UNIVERSITY OF THE PHILIPPINES PRESS
1932



Contents

	Page
Calendar	4
Administrative Officers	7
Board of Regents	10
University Council	11
Charter	15
General Information	20
Graduate Study	47
University Library	57
Summer School	62
Department of Military Science	64
Department of Physical Education	73
College of Liberal Arts	85
School of Business Administration	167
Junior College of the University (Cebu)	201
College of Education	223
University High School	255
College of Engineering	259
School of Surveying	295
College of Law	303
College of Medicine	333
School of Pharmacy	385
School of Hygiene and Public Health	411
College of Agriculture	443
Rural High School	499
College of Veterinary Science	501
School of Forestry	521
Northern Luzon Junior College (Vigan)	535
Conservatory of Music	563
School of Fine Arts	601
Index	617

THE UNIVERSITY CALENDAR FOR THE ACADEMIC YEAR 1932-1933

FIRST SEMESTER

Friday and Saturday, April 29 and 30	Registration, School of Hygiene and Public Health, first trimester.
Tuesday, May 3	Classes begin, School of Hygiene and Public Health.
Monday, May 23 to Saturday, May 28	Regular examination for removal of conditions. (All colleges and schools).
Monday, May 23 to Thursday, June 2	Physical and Medical Examinations
	1. Old students—from May 23 to May 28.
	2. New students—from May 31 to June 2.
Tuesday, May 31	Last day for reporting grades of students who took examination for removal of conditions.
Saturday, May 28 to Saturday, June 4	REGISTRATION OF STUDENTS (LOS BAÑOS COLLEGES)
	1. Working students—May 28.
	2. Seniors—May 31.
	3. Juniors—June 1.
	4. Sophomores—June 2.
	5. Freshmen—June 3.
	6. Cross-registrants—June 4.
Friday and Saturday, June 3 and 4	Registration, School of Fine Arts and Conservatory of Music.
	1. OLD STUDENTS—
	a. June 1—from 8 to 12 noon for seniors and juniors only.
	b. June 1—from 1:30 to 5 p. m. and June 2 from 8 to 12 noon for sophomores only.
	c. June 2—from 1:30 to 5 p. m. for working students, old students returning, and cross-registrants.
Wednesday, June 1 to Saturday, June 4	GENERAL REGISTRATION OF STUDENTS
	2. NEW STUDENTS—
	June 3 and 4—from 8 to 12 noon and from 1:30 to 5 p. m.
Saturday, June 4 at 5 p. m.	GENERAL OPENING EXERCISES.
Monday, June 6 at 8:00 a. m.	Opening exercises (Los Baños colleges)
Monday, June 6	ALL CLASSES BEGIN.
Monday, July 4	Independence Day (No classes).
Monday, July 25 to Thursday, July 28	Final examinations for the first trimester, School of Hygiene and Public Health.
Friday, July 29, and Saturday, July 30	Registration for the 2nd trimester, School of Hygiene and Public Health.
Saturday, July 30	Last day for filing applications for advanced credit.
Monday, August 1	Last day for sending reports of advanced credits to Registrar.
Monday, August 1	Classes for the 2nd trimester, School of Hygiene and Public Health, begin.
Monday, August 8	Last day for sending reports of preliminary grades to Registrar.
Saturday, August 13	Occupation Day (No classes).
Monday, September 12 to Friday, September 30	Advising for 2nd semester (Liberal Arts and Education students).
Monday, September 12	Mid-semester delinquency report (Los Baños colleges).
Monday, October 3 to Friday, October 7	GENERAL FINAL EXAMINATIONS
Monday, October 10	Loyalty Day (No classes in Los Baños colleges).
Monday, October 10	Last day for sending reports of grades to Registrar.
Saturday, October 15	Scholarship committees and faculties meet to pass upon delinquent students and candidates for graduation in October.
Monday, October 17	Last day for sending list of students affected by the scholarship rules, to Registrar.
Wednesday, October 19	Faculty meets to pass upon candidates for graduation in October (Los Baños colleges).

SECOND SEMESTER

Tuesday, October 11 to Saturday, October 15 ..	REGISTRATION OF STUDENTS (LOS BAÑOS COLLEGES)	1. Working students—Oct. 11. 2. Seniors—Oct. 12. 3. Juniors—Oct. 13. 4. Sophomores—Oct. 14. 5. Freshmen—Oct. 15.
Wednesday, October 12 to Monday, October 17 ..	Regular examinations for removal of conditions (All colleges and schools).	
Thursday, October 13	Physical and medical examinations of new registrants (Los Baños colleges).	
Saturday, October 15 and Monday, October 17 ..	Registration, Conservatory of Music and School of Fine Arts.	
Monday, October 17	Last day for sending reports of grades of students who took examination for removal of condition to Registrar.	
Monday, October 17	Classes begin (Los Baños colleges).	
Monday, October 17	Physical and medical examinations of new registrants in Manila colleges and schools.	
		1. OLD STUDENTS— a. Oct. 18—from 8 to 12 noon for seniors and juniors only. b. Oct. 18—from 1:30 to 5 p. m. and Oct. 19 from 8 to 12 noon for sophomores only. c. Oct. 19—from 1:30 to 5 p. m. and Oct. 20 from 8 to 12 noon for freshmen only. 2. New Students including working students, old students returning, and cross-registrants. Oct. 20—from 1:30 to 5 p. m.
Tuesday, October 18 to Thursday, October 20 ..	GENERAL REGISTRATION OF STUDENTS	
Friday, October 21	ALL CLASSES BEGIN.	
Monday, October 24 to Thursday, October 27 ..	Final examination for the 2nd trimester, School of Hygiene and Public Health.	
Friday, October 28, and Saturday, October 29 ..	Registration for the 3rd trimester, School of Hygiene and Public Health.	
Monday, October 31	Classes for the 3rd trimester, School of Hygiene and Public Health, begin.	
Thursday, November 24	Thanksgiving Day (No classes).	
Wednesday, November 30	National Heroes' Day (No classes).	
Saturday, December 10	Mid-semester delinquency report, Los Baños colleges.	
Sunday, December 18 to Monday, January 2 ...	Christmas vacation (Manila colleges and schools including the Cebu and Vigan branches).	
Sunday, December 18 to Sunday, January 8 ...	Christmas vacation (Los Baños colleges).	
Tuesday, January 3	ALL CLASSES RESUMED (excepting in Los Baños colleges).	
Saturday, January 7	Last day for sending reports of preliminary grades to Registrar.	
Monday, January 9	Classes resumed in Los Baños colleges.	
Sunday, February 5 to Saturday, March 4	Field assignment, School of Hygiene and Public Health.	
Monday, February 6 to Tuesday February 28 ..	Advising for next academic year, (Liberal Arts and Education students).	
Saturday, February 11	Examination for removal of conditions (for graduating students only).	
Wednesday, February 22	Washington's birthday (No classes).	
Monday, March 6 to Friday, March 10	GENERAL FINAL EXAMINATIONS (School of Hygiene and Public Health, included).	
Tuesday, March 7 to Saturday, March 11	Final examination, Los Baños colleges.	
Monday, March 13	Last day for sending reports of grades to Registrar.	
Tuesday, March 14	College faculties meet to pass upon candidates for graduation.	
Wednesday, March 15	Last day for sending to Registrar lists of students recommended for graduation.	
Wednesday, March 15 to Friday, March 17	Exhibition of the works of Fine Arts students.	
Wednesday, March 15 (morning)	Commencement Day for Rangers.	
Wednesday, March 15 (afternoon)	Commencement Day, Junior College, Cebu.	
Thursday, March 16 (morning)	Commencement, Northern Luzon Junior College, Vigan.	

THE UNIVERSITY CALENDAR

Thursday, March 16 (afternoon)	Commencement, Rural High School.
Friday, March 17 (morning)	University Council meets to recommend candidates for graduation.
Friday, March 17 (afternoon)	Board of Regents meets to approve all candidates for graduation.
Friday, March 17 (afternoon)	Commencement, U. P. High.
Saturday, March 18 (morning)	Commencement, School of Public Health Nursing.
Saturday, March 18 (evening)	Commencement, Conservatory of Music.
Sunday, March 19 (afternoon)	Baccalaureate Exercises.
Monday, March 20 (morning)	Commencement, School of Nursing.
Monday, March 20 (afternoon)	Commencement, School of Surveying.
Monday, March 20 (evening)	Senior Reception.
Tuesday, March 21 (morning)	GENERAL COMMENCEMENT DAY.

SUMMARY OF CLASS DAYS

First Semester

	M	T	W	T	F	S
June	4	4	4	4	3	3
July	3	4	4	4	5	5
August	5	5	5	4	4	3
September ..	4	4	4	5	5	4
October	1	—	—	—	—	—
TOTAL	17	17	17	17	15	100

Second Semester

	M	T	W	T	F	S
October	2	1	1	1	2	2
November	4	5	4	3	4	4
December	2	2	2	3	3	3
January	4	5	4	4	4	4
February	4	4	3	4	4	4
March	—	—	1	1	1	1
TOTAL	16	17	15	16	18	100

Administrative Officers of the University

OFFICE OF THE PRESIDENT

RAFAEL PALMA, LL.B., LL.D., *President*.

VICENTE LONTOK, LL.B., LL.M., *Secretary to the President*.

OFFICE OF THE REGISTRAR

LEANDRO H. FERNANDEZ, M.A., Ph.D., *Registrar*.

FELIPE FRANCISCO, Ph.B., *Assistant to the Registrar*.

OFFICE OF THE SECRETARY-TREASURER

FELIPE ESTELLA, LL.B., *Secretary-Treasurer*.

ELIAS MANALANG, LL.B., *Property-Supply Officer*.

FRUCTUOSO AQUINO, *Superintendent of Grounds and Buildings*.

DOMINGO CERVANTES, *Chief Clerk*.

OFFICE OF THE COMPTROLLER

JUAN D. QUINTOS, B.S.C., C.P.A., *Comptroller*.

JUAN FELIX, B.S.C., *Assistant to the Comptroller*.

OFFICE OF THE DEAN OF MEN

HENRY S. TOWNSEND, M.A., PsD., *Dean of Men*.

OFFICE OF THE DEAN OF WOMEN

URSULA B. UICHANCO., B.S.E., M.A., *Dean of Women, Colleges of Education, Liberal Arts, and Law*.

AMPARO CONCHA-BRILLANTES, M.D., *Dean of Women, College of Medicine, including School of Pharmacy*.

EMILIA REYSIO-CRUZ, *Dean of Women, Conservatory of Music*.

LUCIA FRANCISCO and EUGENIA AGONCILLO, *Assistant Deans of Women, Conservatory of Music*.

OFFICE OF THE LIBRARIAN OF THE UNIVERSITY

GABRIEL A. BERNARDO, B.L.S., M.A., *Librarian*.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

FIDEL V. SEGUNDO, Captain, P.S. (Field Artillery), *P.S., U.S. Army, Acting Head of the Department*.

DEPARTMENT OF PHYSICAL EDUCATION

CANDIDO C. BARTOLOME, M.A., M.P.E., *Acting Director*.

EX-OFFICIO OFFICERS

SALVADOR LAGDAMEO, *Treasurer of the Philippine Islands, Treasurer ex officio*.

CREED C. HAMMOND, *Auditor of the Philippine Islands, Auditor ex officio*.

Administrative Officers of the Colleges and Schools of the University

COLLEGE OF MEDICINE

FERNANDO CALDERON, A.B., M.D., *Dean*.
SIXTO DE LOS ANGELES, A.B., L.M., *Acting Dean*,
DANIEL DE LA PAZ, M.D., *Secretary*.
PEDRO M. CHANCO, *Chief Clerk and Superintendent of City Morgue*.

COLLEGE OF AGRICULTURE

BIENVENIDO M. GONZALEZ, M.S., Sc.D., *Dean*.
FRANCISCO M. FRONDA, M.S., Ph.D., *Secretary*.
ALFREDO V. YÑIGUEZ, *Chief Clerk and Disbursing Officer*.

COLLEGE OF VETERINARY SCIENCE

GREGORIO SAN AGUSTIN, D.V.M., *Dean*.
LOPE YUTUC, D.V.M., *Secretary*.

COLLEGE OF LIBERAL ARTS

MAXIMO M. KALAW, A.B., LL.B., Ph.D., *Dean*.
VIDAL A. TAN, C.E., Ph.D., *Acting Dean*.
ENRIQUE T. VIRATA, M.A., Ph.D., *Secretary*.
CORNELIO C. CRUZ, M.S., Ph.D., *Chief Clerk*.

COLLEGE OF ENGINEERING

EDWARD R. HYDE, B.S., *Dean*.
HERMENEGILDO B. REYES, M.E., M.M.E., *Secretary*.

COLLEGE OF LAW

JORGE BOCOBO, LL.B., LL.D., *Dean*.
MELQUIADES J. GAMBOA, A.B., LL.B., LL.M., *Secretary*.
GERARDO FLORENDO, LL.B., *Acting Secretary*.

COLLEGE OF EDUCATION

FRANCISCO BENITEZ, B.S., M.A., LL.D., *Dean*.
MELQUIADES M. CASTRO, B.S.E., *Secretary*.

JUNIOR COLLEGE OF THE UNIVERSITY

JOSE S. REYES, M.A., Ph.D., *Dean*.
JULIO E. PONGAN, B.S.E., *Registrar*.

SCHOOL OF PHARMACY

MARIANO V. DEL ROSARIO, Phar.D., M.S., M.D., *Director.*

PATROCINIO VALENZUELA, B.S.Pharm., Phar.D., Ph.D., *Secretary.*

SCHOOL OF FORESTRY

ARTHUR F. FISCHER, C.E., M.F., *Dean.*

HAROLD CUZNER, B.S.F., *Forester-in-charge.*

SUMMER SCHOOL

LEANDRO H. FERNANDEZ, M.A., Ph.D., *Director.*

JOSE GENEROSO, LL.B., *Special Disbursing, Collecting and Property Officer, Baguio.*

NORTHERN LUZON JUNIOR COLLEGE

AGUSTIN S. ALONZO, M.A., Ph.D., *Dean.*

VEDASTO J. SAMONTE, M.A., Ph.D., *Secretary.*

SCHOOL OF FINE ARTS

FABIAN DE LA ROSA, A.B., *Director.*

TORIBIO HERRERA, A.B., L.M., *Secretary.*

CONSERVATORY OF MUSIC

FRANCISCO SANTIAGO, MUS.D., *Director.*

JOSE GENEROSO, LL.B., *Secretary.*

UNIVERSITY HIGH SCHOOL

JUAN C. CANAVE, B.S.E., M.A., *Principal.*

CONSUELO BARRERA, B.A., B.S.E., *Assistant Principal.*

The Board of Regents

REGENTS EX-OFFICIO

Honorable GEORGE C. BUTTE, Vice-Governor of the Philippine Islands and Chairman of the Board of Regents.

Honorable RAFAEL PALMA, President of the University.

Honorable LUTHER B. BEWLEY, Director of Education.

Honorable ELPIDIO QUIRINO, Chairman of the Committee on Public Instruction of the Philippine Senate.

Honorable GREGORIO ANONAS, Chairman of the Committee on Public Instruction of the House of Representatives.

APPOINTED REGENTS

Honorable HORACE B. POND, Term expires 1934.

Honorable LUDOVICO HIDROSOLLO, Term expires 1932.

Honorable FRANCISCO ORTIGAS, Term expires 1933.

ELECTED REGENTS

ALUMNI

Honorable CARLOS P. ROMULO, Term expires 1934.

Honorable JOSE F. ZAMORA, Term expires 1933.

FACULTY

Honorable VIDAL A. TAN, Term expires 1933.

STANDING COMMITTEES OF THE BOARD OF REGENTS

AGRICULTURE, FORESTRY AND

Regent Francisco Ortigas

VETERINARY SCIENCE

MUSIC AND FINE ARTS

Regent Ludovico Hidrosollo, Chairman

Regent Gregorio Anonas, Chairman

Regent Jose F. Zamora

Regent Ludovioco Hidrosollo

Regent Gregorio Anonas

Regent Horace B. Pond

EDUCATION

BUILDINGS AND GROUNDS

Regent Carlos P. Romulo, Chairman

Regent Vidal A. Tan, Chairman

Regent Elpidio Quirino

Regent George C. Butte

Regent Luther B. Bewley

Regent Francisco Ortigas

ENGINEERING

EDUCATIONAL POLICY

Regent Horace B. Pond, Chairman

Regent Vidal A. Tan, Chairman

Regent Carlos P. Romulo

Regent Luther B. Bewley

Regent Ludovico Hidrosollo

Regent Jose F. Zamora

LAW

FINANCE

Regent Francisco Ortigas, Chairman

Regent Horace B. Pond, Chairman

Regent Ludovico Hidrosollo

Regent Carlos P. Romulo

Regent Elpidio Quirino

Regent Gregorio Anonas

LIBERAL ARTS & JUNIOR COLLEGES

LEGISLATION

Regent Jose F. Zamora, Chairman

Regent Elpidio Quirino, Chairman

Regent Carlos P. Romulo

Regent Gregorio Anonas

Regent Elpidio Quirino

Regent Horace B. Pond

MEDICINE

Regent Luther B. Bewley, Chairman

NOTE: The President is an ex-officio member of all standing committees of the Board without vote.

Regent Jose F. Zamora

The University Council

The University Council is composed of the President of the University, and of all instructors in the University holding the rank of professor, associate professor, or assistant professor. Meetings ordinarily are held on the first Saturday of each month during school year, but the same may be held at such other times as the exigencies of the service may require. Names of the members on leave (inactive) are starred. Two hundred and fourteen active members are listed, a majority of whom constitutes a quorum. Council list corrected up to May 1, 1932.

ADMINISTRATIVE OFFICERS

President RAFAEL PALMA, Chairman ex-officio

Registrar LEANDRO H. FERNANDEZ, Secretary ex-officio

PROFESSORS

Albert, Jose
Angeles, Sixto de los
Benitez, Conrado
Benitez, Francisco
Beyer, H. Otley
Bocobo, Jorge
Borromeo, Canuto
Calderon, Fernando
Clemente, Amando
Concepcion, Isabelo
Conklin, Robert J.
Curran, Hugh M.
Cuzner, Harold
Eaton, L. S.
Eduque, Jose
Elayda, Inocencio
Espino, Rafael B.
Espiritu, Jose A.
Fernandez, Leandro H.
Fischer, Arthur F.
Garcia, Arturo

Segundo, Fidel V.
Gokhale, V. D.
Gomez, Liborio
Gonzalez, Bienvenido M.
Guerrero, Luis
Hocson, Felix
Hyde, E. R.
Kalaw, Maximo M.
King, Reginald
Labrador, Alejo
Magsaysay, Ambrosio
Mariano, Ramon
Mendiola, Nemesio B.
Mendoza-Guazon, Paz
Nañagas, Juan C.
Obear, George B.
Osborn, Lois S.
Patton-Sanguinet, Clothilde
Paz, Daniel de la
Pendleton, R. L.
Reyes, Carmelo

Reyes, Hermenegildo B.
Reyes, Jose S.
Reyes, Teofilo
Rosario, Jose I. del
Rosario, Mariano V. del
Roxas, Baldomero
Salvosa, Luis R.
San Agustín, Gregorio
Sinco, Vicente G.
Sison, Antonio G.
Tan, Vidal A.
Teodoro, Jose
Townsend, Henry S.
Ubaldo, Aristeo R.
Uichanco, Leopoldo B.
Urizar, Marcelo
Veyra, Jaime C. de
Yule Emma S.

ASSOCIATE PROFESSORS

Acosta-Sison, Honoria
Alonzo, Agustin S.
Alzona, Encarnacion
Bernardo, Gabriel A.
Bulatao, Emilio
Cañizares, Miguel
Concha-Brillantes, Amparo
Corcuera, A. Leynes
Duran, Pio
Feliciano, Jose M.
Fernandez, Ricardo
Florendo, Gerardo
Gamboa, Melquiades J.

Garcia, Faustino
Gomez, Angel K.
Gutierrez, Perpetuo
Lara, Hilario
Leiva, Lamberto
Leon, Walfrido de
McKracken-Walser Ruth
Manguerra, Mariano F.
Marañon, Joaquin
Monserrat, Carlos
Prihodko, V.
Quisumbing, Eduardo
Quisumbing, Francisco

Racelis, Antonio P.
Roman, Felipe R.
Santos, Francisco O.
Santos, Jose K.
Sumulong, Manuel D.
Thomas, Esther E.
Tirona, Ramona S.
Tolentino, Mariano
Valenzuela, Patrocinio
Vasquez, Antonio D.
Velarde, Herminio
Viterbo, Antonio

ASSISTANT PROFESSORS

Abello, Tomas
Adriano, Felipe
Africa, Bernabe

Africa, Candido
Agoncillo, Maria
Aguirre, Soledad

Amos, Felipe R.
Angeles, Estanislao P.*
Apostol, Jose P.

Austria, Quirino
 Baclig, Eustaquio
 Balce, Sofronio
 Barrera, Consuelo
 Bartolome, Candido
 Batterton, M. B.
 Canave, Juan
 Cantera, Angela B. de la
 Capistrano, Francisco
 Catambay, Alejandro
 Carlos, Meneleo
 Clemente, Leopoldo
 Cordero, Narciso
 Cruz, Cornelio C.
 Cuajunco, Fidel
 Domingo, Elias
 Dyson, Verne
 Edmunds, C. W.
 Esquivel, Prudencio
 Estrada, Januario
 Fernando, Antonio S.
 Foster, Helen
 Francisco, Fermin
 Francisco, Sixto A.
 Fraser, Elvie R.
 Fronda, Francisco
 Gana, Mariano D.
 Garcia, Alejandro D.
 Gonzaga, Luis
 Gonzales, Leon
 Guevarra, Romulo
 Herreria, Pilar Perez
 Hilario, Vicente M.
 Jamias, Cristino *
 Jesus, Pablo de
 Jesus, Zacarias de

Lantin, Pedro T.
 Lanzar-Carpio, Maria C.
 Leon, Antonio de
 Limson, Marciano
 Llenado, Agustin
 Lontok, Vicente
 Lopez, Cecilio
 Macaraig, Serafin
 Malabanan-Valenzuela, E.
 Mallari, Ismael V.
 Mandanas, Aniceto Y.
 Manresa, Miguel
 Maravillas, Filomeno
 Marquardt, Josephine O.
 Marquez-Benitez, Paz
 Martelino, Pastor
 Melchor, Alejandro
 Miles, Mrs. Norris
 Mondoñedo, Mariano
 Moran, Juan S.
 Natividad, Emilio
 Navarro, Regino J.
 Ocfemia, Gerardo
 O'Connor-Pablo, Winnifred
 Olivares, Jose
 Ortigas, Crisostomo
 Panlasigui, Isidoro
 Pascual, Wenceslao
 Paz, Delfin de la
 Pendleton, Anne M.
 Perez, Francisco
 Pongan, Julio E.
 Reyes, Salvador F.
 Reyes, Alejandro
 Reed, Hazel D.
 Rein, Paul

Roa, Manuel A.
 Rosa, Fabian de la
 Roxas, Hilario A.
 Roy, Dharendra Nath
 Rustia, Guillermo
 Samonte, Vedasto J.
 Santa Cruz, Juan Z.
 Santiago, Francisco
 Santiago, Pedro
 Santos, Alfredo C.
 Santos, Paterno
 Sañiel, Isidoro
 Segundo, Fidel
 Soriano, Doroteo
 Sult, Carlos
 Sunico, Francisco
 Tangco, Marcelo
 Teodoro, Anastacio
 Teotico, Jose
 Thomas, Mary
 Tienzo, Telesforo
 Tionson, Juan L.
 Tubangui, Marcos
 Tupas, Alberto
 Uichanco, Ursula B.
 Valdez-Ventura, Maria
 Villa, Paciente S.
 Villadolid, Deogracias
 Villarama, Antonio
 Villegas, Anastacia
 Villegas, Valente
 Virata, Enrique T.
 Vitug, Wenceslao
 Wendt, Julia
 Yulo-Tan, Teresa
 Zafra, Nicolas

* On leave

STANDING COMMITTEES OF THE UNIVERSITY COUNCIL

1. *Executive Committee:*
All deans of colleges confer-
ring degrees and the Re-
gistrar
Daniel de la Paz, Medicine
Manuel D. Sumulong, Vet.
Science
2. *Attendance:*
Emma S. Yule, Agriculture
Nicolas Zafra, Liberal Arts
Ramona S. Tirona, Education
Vicente G. Sinco, Law
Mariano V. del Rosario,
Medicine
Arthur F. Fischer, Forestry
Manuel D. Sumulong, Vet.
Science
Crisostomo Ortigas, Engineer-
ing
3. *Board of Athletic Control:*
Mariano F. Manguerra, Pres.,
Engineering.
Enrique T. Virata, Liberal
Arts
Francisco Capistrano, Law
Antonio G. Sison, Medicine
Rafael B. Espino, Agricul-
ture
José Teodoro, Education
Gregorio San Agustin, Vet.
Science
Candido C. Bartolome, Phys.
Educ.
Commandant, Military Science
Carlos Sulit, Forestry
Alfredo V. Yñiguez, Los Ba-
ños Sub-Treas.
4. *Ent. & Relations to Other Ins-
titutions:*
Leandro H. Fernandez, Lib.
Arts, Chairman
Francisco M. Fronda, Agri-
culture
Juan C. Canave, Education
Ambrosio Magsaysay, Eng-
ineering
Jose A. Espiritu, Law
5. *Graduate Studies:*
Maximo M. Kalaw, Lib.Arts,
Chairman
Nemesio B. Mendiola, Agri-
culture
Patrocinio Valenzuela, Phar-
macy
L. B. Uichanco, Agriculture
Jose K. Santos, Liberal Arts
Leandro H. Fernandez, Li-
beral Arts
Francisco Benitez, Education
6. *Honorary Degrees:*
Jose Albert, Medicine, Chair-
man
Maximo M. Kalaw, Liberal
Arts
Bienvenido M. Gonzalez,
Agriculture
Francisco Benitez, Education
Hermenegildo B. Reyes, Eng-
ineering
Jorge Bocobo, Law
Gregorio San Agustin, Vet.
Science
7. *Military Science & Tactics:*
Commandant, Military Sci-
ence, Chairman
L. B. Uichanco, Agriculture
Hilario Roxas, Liberal Arts
José Teodoro, Education
Prudencio F. Esquivel, Eng-
ineering
Gerardo Florendo, Law
(Vacant)
Manuel D. Sumulong, Vet.
Science
Carlos Sulit, Forestry
The Physical Director (Ex-
officio)

October 12, 1931

8. *Student Organization & Activities:*

Vidal A. Tan, Lib.Arts,
Chairman

Deogracias Villadolid, Agric.

Jose K. Santos, Liberal Arts

Maria Valdez-Ventura, Edu-
cation

Jose A. Espiritu, Law

Sixto de los Angeles, Med-
icine

Angel K. Gomez, Vet. Science

Francisco Santiago, Music

Fabian de la Rosa, Fine Arts

Candido C. Bartolome, Phys.
Educ.

Commandant, Military Sci-
ence

Hermenegildo B. Reyes, Eng-
ineering

The Dean of Men (Ex-offi-
cio)

The Dean of Women (Ex-of-
ficio)

9. *Students' Progress:*

Bienvenido M. Gonzalez,
Agric. Chairman

Bernabe Africa, Liberal Arts

José Teodoro, Education

L. S. Eaton, Engineering

Gerardo Florendo, Law

Maria Paz Mendoza-Guazon,
Med.

Marcos Tubangui, Vet. Sci-
ence

The Dean of Women (Ex-of-
ficio)

The Dean of Women (Ex-
officio)

10. *Student Publications:*

Vicente Lontok, Law, Chair-
man

Cristino Jamias, Liberal Arts

Rafael B. Espino, Agriculture

Maria Valdez-Ventura, Edu-
cation

Teofilo Reyes, Engineering

Lamberto Leiva, Medicine

Anne Pendleton, Forestry

Angel K. Gomez, Vet. Science

The Dean of men (Ex-offi-
cio)

The Dean of Women (Ex-of-
ficio)

11. *University Curriculum:*

Henry S. Townsend, Lib.
Arts, Chairman

Amando Clemente, Liberal
Arts

Francisco Fronda, Agricul-
ture

Alejo Labrador, Law

Isabelo Concepcion, Medicine

Harold Cuzner, Forestry

Hermenegildo B. Reyes, Eng-
ineering

Manuel D. Sumulong, Vet.
Science

Lois S. Osborn, Education

12. *Academic Costume & Ceremo- nies:*

G. A. Bernardo, Lib. Arts,
Chairman

José A. Espiritu, Law

Isidoro Sañiel, Lib. Arts

Juan C. Nañagas, Medicine

Elvie Fraser, Education *

Angel K. Gomez, Vet. Science

Meneleo Carlos, Engineering

Emma S. Yule, Agriculture

* On leave

Government and History of the University

THE UNIVERSITY CHARTER

AN ACT FOR THE PURPOSE OF FOUNDING A UNIVERSITY FOR THE PHILIPPINE ISLANDS, GIVING IT CORPORATE EXISTENCE, PROVIDING FOR A BOARD OF REGENTS, DEFINING THE BOARD'S RESPONSIBILITIES AND DUTIES, PROVIDING HIGHER AND PROFESSIONAL INSTRUCTION, AND FOR OTHER PURPOSES. (ACT No. 1870, AMENDED BY ACT No. 2024, ENACTED JANUARY 30, 1911; ACT No. 2483, ENACTED FEBRUARY 5, 1915; ACT No. 2759, ENACTED FEBRUARY 23, 1918; AND ACT No. 3197, ENACTED DECEMBER 2, 1924.)

By authority of the United States, be it enacted by the Philippine Legislature, that:

SECTION 1. The Governor-General is hereby authorized, within the powers and limitations hereinafter specified, to establish in the City of Manila, or at the point he may deem most convenient, a university which shall be known by the designation of "University of the Philippine's," the same being organized as a corporation under that name.

PURPOSE OF THE UNIVERSITY

SEC. 2. The purpose of said University shall be to provide advanced instruction in literature, philosophy, the sciences, and arts, and to give professional and technical training.

SEC. 3. No student shall be denied admission to the University by reason of age, sex, nationality, religious belief, or political affiliation.

BOARD OF REGENTS: (a) ITS COMPOSITION

SEC. 4. The government of said University is hereby vested in a board of regents to be known as the "Board of Regents of the University of the Philippines." The Board of Regents shall be comprised of the Secretary of Public Instruction, who shall be ex-officio chairman of the Board; the chairman of the Committee on Public Instruction of the Senate; the chairman of the Committee on Public Instruction of the House of Representatives; the President of the University; the Director of Education; one member of the University Council of the University of the Philippines elected by said Council; two alumni of the University of the Philippines, elected by the alumni of the University under such rules and regulations as may be promulgated by the Board of Regents; and three additional members to be appointed by the Governor-General, by and with the consent of the Philippine Senate. The President of the University shall be elected

and his compensation shall be fixed by the Board of Regents. The member elected by the University Council and the members elected by the alumni of the University shall hold office for a term of three years or until their successors are elected or appointed. Beginning with October sixteen, nineteen hundred and nineteen, the members of the Board of Regents appointed by the Governor-General shall hold office for a term of three years: *Provided, however*, That the regents first appointed after said date shall hold office as follows: One for one year, one for two years, and one for three years, the term of office of each to be specified in his appointment by the Governor-General. In case of vacancy among the members of the Board of Regents appointed by the Governor-General, such vacancy shall be filled by appointment by the Governor-General by and with the advice and consent of the Philippine Senate, and such appointee shall hold office for the unexpired term. All members of the Board of Regents shall be citizens of the Philippine Islands or of the United States, and shall be residents of the Philippine Islands. No person in the employ of the University in any capacity whatsoever, whether as dean, professor, instructor, lecturer, or otherwise, shall be eligible to membership on the Board, whether by appointment by the Governor-General or by election of the alumni, with the exception of the regent elected by the University Council; *Provided, further*, That any person now holding office as member of the Board of Regents at the time of the approval of this Act who is or may be a member of the faculty of the University of the Philippines or in the employ of the same, except the member elected by the University Council, shall continue to hold office until the expiration of his term.

Members shall serve without compensation other than actual and necessary expenses incurred either in attendance upon meetings of the Board or upon other official business authorized by resolution of the Board.

SEC. 5. The University of the Philippines shall have the general powers set out in section thirteen of Act Numbered Fourteen hundred and fifty-nine, and the administration of said University and the exercise of its corporate powers are hereby vested exclusively in the Board of Regents and the President of the University in so far as authorized by said Board.

(b) ITS POWERS

SEC. 6. The Board of Regents shall have the following powers and duties, in addition to its general powers of administration and the exercise of the powers of the corporation:

(a) To receive and appropriate to the ends specified by law such sums as may be provided by law for the support of the University;

(b) To provide for the establishment of one or more Colleges of Liberal Arts; a College of Law; a College of Social and Political Science; a College of Medicine and Surgery; a College of Pharmacy; a College of Dentistry; a College of Veterinary Science; a College of Engineering; a College of Mines; a College of Agriculture; a College of Education; a School of Fine Arts; a School of Forestry; a Conservatory of Music, and such other colleges and schools as the Board of Regents may deem necessary: *Provided*, That the Board of Regents may establish these colleges,

or any of them, in Manila or in any other place in the Archipelago, as soon as in its judgment conditions shall favor their opening and funds shall be available for their maintenance: *And provided, further*, That the Board of Regents shall have power to combine two or more of the colleges authorized by this Act, in the interest of economy and efficiency; *And provided, finally*, That the Philippine Medical School, as established by Act Numbered Fourteen hundred and fifteen, as amended, shall become the College of Medicine and Surgery of the Philippine University as soon as two or more colleges of the University of the Philippines shall have been established and in actual operation;

(c) To confer the usual honorary degrees upon persons other than graduates of the University in recognition of learning, statesmanship, or eminence in literature, science, or art: *Provided*, That such degrees shall not to be conferred in consideration of the payment of money or other valuable consideration;

(d) To establish chairs in the colleges hereinbefore mentioned, and to provide for the maintenance or endowment of such chairs, as well as to provide for such other professors, assistant professors, instructors, tutors, and lecturers as the progress of instruction may make necessary, and to fix the compensation pertaining to such positions;

(e) To appoint, on the recommendation of the President of the University, professors, instructors, lecturers, and other employees of the University, to fix compensation, hours of service, and such other duties and conditions as it may deem proper, to apply to them in its discretion the Leave Law, any other provision of law to the contrary notwithstanding, and to remove them for cause after an investigation and hearing shall have been had;

(f) To approve the course of study and rules of discipline drawn up by the University Council as hereinafter provided; to fix the tuition fees required of students, as well as the matriculation fees, graduation fees and fees for laboratory courses, and all special fees; and to remit the same in special cases;

(g) To provide fellowships and scholarships and to award the same to students giving special evidence of merit;

(h) To prescribe rules for its own government, and to enact for the government of the University such general ordinances and regulations, not contrary to law, as are consistent with the purposes of the University as defined in section two of this Act.

(i) To receive, in trust, bequests, gifts, and donations of real and personal property, of whatever kind, and to administer the same for the benefit of the University, or any department thereof, or for the assistance of any student or students thereof, in accordance with the request or direction of the donor and, in the absence thereof, as may be determined by the Board of Regents in its discretion.

QUORUM

SEC. 7. A quorum of the Board of Regents shall consist of a majority of all the members holding office at the time the meeting of the Board

is called. All process against the Board of Regents shall be served on the president or secretary thereof.

SEC. 8. On or before the tenth day of August of each year, the Board of Regents shall file with the Governor-General a detailed report, setting forth the progress, conditions, and needs of the University.

THE UNIVERSITY COUNCIL

SEC. 9. There shall be a University Council, consisting of the President of the University and of all instructors in the University holding the rank of professor, associate professor, or assistant professor. The Council shall have power to prescribe the courses of study and rules of discipline, subject to the approval of the Board of Regents. It shall fix the requirements for admission to any college of the University, as well as for graduation and the receiving of a degree. The Council alone shall have the power to recommend students or others to be recipients of degrees. Through its president or committees it shall have disciplinary power over the students within the limits prescribed by the rules of discipline approved by the Board of Regents. The powers and duties of the President of the University, in addition to those specifically provided for in this Act, shall be those usually pertaining to the office of the president of a university.

THE FACULTIES

SEC. 10. The body of instructors of each college shall constitute its faculty, and as presiding officer of each faculty there shall be a dean elected from the members of such faculty by the Board of Regents on nomination by the President of the University. In the appointment of professors or other instructors of the University, no religious test shall be applied, nor shall the religious opinions or affiliations of the instructors of the University be made a matter of examination or inquiry: *Provided, however,* That no instructor in the University shall inculcate sectarian tenets in any of the teachings, nor attempt, either directly or indirectly, under the penalty of dismissal by the Board of Regents, to influence students or attendants at the University for or against any particular church or religious sect.

SEC. 11. Professors and other regular instructors in the University shall be exempt as such from any civil service examination or regulation as a requisite to appointment.

THE SECRETARY

SEC. 12. There shall be a secretary of the University, appointed by the Board of Regents. He shall be the secretary of such Board and also of the University, and shall keep such records of the University as may be designated by the Board.

THE TREASURER

SEC. 13. The Treasurer of the Philippine Islands shall be ex-officio Treasurer of the University, and all accounts and expenses thereof shall be audited by the Insular Auditor, and all disbursements shall be made in accordance with the rules and regulations prescribed by him.

RELATIONS WITH OTHER GOVERNMENT BRANCHES

SEC. 14. Heads of Bureaus and Offices of the Insular Government are hereby authorized to loan or transfer, upon request of the President of the University, such apparatus or supplies as may be needed by the University and to detail employees for duty therein, when in the judgment of the head of the Bureau or Office such supplies or employees can be spared without serious detriment to the public service. Employees so detailed shall perform such duty as is required under such detail, and the time so employed shall count as part of their regular official service.

BOARD OF VISITORS

SEC. 15. The Governor-General, the President of the Senate, and the Speaker of the House of Representatives shall constitute a board of visitors of the University, whose duty it shall be to attend the commencement exercises of the University, and to make visits at such other times as they may deem proper, to examine the property, course of study, discipline, the state of finances of the University, to inspect all books and accounts of the institution, and to make report to the Philippine Legislature upon the same, with such recommendation as they favor.

SEC. 16. The sum of one hundred thousand pesos is hereby appropriated, out of any funds in the Insular Treasury not otherwise appropriated, to be expended in the discretion of the Board of Regents for the establishment of a college or colleges authorized by this Act, the establishment of which may be considered most urgent.

SEC. 17. This Act shall take effect on its passage.

Enacted, June 18, 1908.

General Information

HISTORICAL SKETCH

Pursuant to the passage of the foregoing Act by the First Philippine Legislature, the work of establishing the colleges thus provided was begun during the latter part of the year 1908.

The Philippine Medical School established by a special Act on December 1, 1905, and opened to students for the purpose of instruction on June 10, 1907, became the College of Medicine and Surgery of the University on December 8, 1910. On March 1, 1923, its name was changed to College of Medicine.

The School of Fine Arts was temporarily established in a house rented for that purpose at 931 Calle R. Hidalgo, Quiapo, in the City of Manila, and was opened to students in June, 1909. In May, 1926, this school moved to its present location on California St., Ermita.

A location for the College of Agriculture was obtained by the transfer to the Board of Regents of certain lands near Los Baños, in the Province of Laguna, which had already been secured by the Bureau of Education for an Agricultural School. A temporary building was erected on this property, and school work began therein June, 1909.

The establishment of the Experimental Station annexed to the College of Agriculture was authorized by the Legislature under Act No. 2730, enacted February 15, 1918.

The buildings for a College of Veterinary Science were erected first on land adjoining the animal quarantine station at Pandacan, Manila. The first class was received in June, 1910. In November, 1912, the Veterinary Clinic and Hospital were opened on the grounds adjoining San Lazaro Hospital. At present, the college is located in Los Baños, Laguna.

The College of Liberal Arts and the College of Engineering were established June 3, 1910, and their classes opened the same month. The College of Liberal Arts had previously existed as a Government school in the Bureau of Education, known by the name of the Junior College of Liberal Arts.

A course in pharmacy was instituted under the administrative control of the College of Liberal Arts, June 5, 1911. Beginning with the academic year 1914-15 this course, by action of the Board of Regents on February 12, 1914, was transferred to the College of Medicine under the direction of the School of Pharmacy.

The Board of Regents at its meeting of May 3, 1918, authorized the establishment of a Junior College of Liberal Arts in the City of Cebu and its classes were opened formally to students on July 1, 1918. On July 1, 1922, the Junior College of Liberal Arts, by action of the Board of Regents, became the Junior College of the University.

The construction of Rizal Hall was authorized by the Legislature under Act No. 2736, enacted February 15, 1918.

The School of Education, a department of the College of Liberal Arts authorized by the Board of Regents at its meeting of December 8, 1913, became, by a resolution of said board, the College of Education on July 1, 1918.

The College of Law was established on January 12, 1911.

On February 4, 1916, the Philippine Legislature by Act No. 2578 founded the School of Forestry at Los Baños.

Previous to this time the Ranger's Course in Forestry was given in the College of Agriculture.

On February 8, 1915, the Board of Regents authorized the institution of a course in dentistry to be given in the College of Medicine.

The Conservatory of Music was authorized by Act No. 2623, and classes were opened on September 4, 1916 at No. 963 Calle R. Hidalgo in a building rented for that purpose. In June, 1925, the Conservatory moved to a new building located at the corner of Isaac Peral and Nebraska, Ermita.

The creation of a branch of the College of Liberal Arts in the municipality of Vigan, Ilocos Sur, for the provinces of Northern Luzon, was authorized by Act No. 2956 of the Philippine Legislature, approved on February 19, 1921, but, because of limited appropriations, this branch was able to open its first class only on June 9, 1930. The Board of Regents, at the meeting held on March 21, 1930, officially designated it as the Northern Luzon Junior College.

The Philippine Legislature, in its session in November, 1926, included in the Appropriation Act of 1927 the sum of ₱20,000, under the Philippine Health Service budget, as a contribution to the University of the Philippines for the establishment and sole operation of the School of Hygiene and Public Health. By virtue of this contribution the School was organized and established as a regular unit of the University of the Philippines. Its first inauguration exercises were held on June 6, 1927, at the Marble Hall, Ayuntamiento.

All the colleges and schools of the University are situated in Manila, except the Colleges of Agriculture and Veterinary Science and the School of Forestry which are located at Los Baños, Laguna, the Junior College of the University at Cebu, and the Northern Luzon Junior College at Vigan.

RULES GOVERNING THE ELECTION OF THE COUNCIL AND ALUMNI REPRESENTATIVES TO THE BOARD OF REGENTS

THE REPRESENTATIVE OF THE UNIVERSITY COUNCIL

1. *Election at meeting of Council; call for meeting.*—Election of a member of the Board of Regents of the University Council shall take place on the day the council meets to approve candidates for graduation, beginning this year (1918) and upon the same day every three years thereafter.

2. *Voters.*—Only members of the University Council are entitled to vote at this election.

3. *Eligibility.*—Only members of the University Council shall be eligible for the office of the regent chosen at this election.

4. *Secret ballot.*—Election shall be by secret ballot.

5. *What constitutes choice.*—A majority of the votes cast shall constitute a choice, provided there is a quorum present.

6. *Vote by proxy.*—No vote by proxy shall be received.

7. *Certificate of election.*—The secretary of the University Council shall forthwith certify to the result of the election and forward the certificate to the Board of Regents.

8. *When regent-elect qualifies.*—The regent-elect shall qualify at the meeting of the Board immediately following his election.

REPRESENTATIVES OF THE ALUMNI OF THE UNIVERSITY OF THE PHILIPPINES

SEC. 1. *Qualification of voters.*—Every person, regardless of sex and age, holding any degree, or the High School Teachers Certificate granted by the University of the Philippines shall be entitled to vote.

SEC. 2. *Manner of election.*—The president of the University shall fix a period within which nominations may be received at the office of the Registrar of the University and the closing of the polls.*

Every nomination shall be signed by at least twenty-five alumni who are qualified to vote. No alumnus shall sign more than one nomination.

Election shall be by ballot, signed by the alumnus voting and sent to the office of the Registrar. The president shall appoint a faculty committee on elections, of which the registrar of the University shall be a member, and whose duty it shall be to prepare the official ballot, to see to it that the election is legally carried out, to count the votes cast, and to report the result of the election to the President of the University. Upon receipt of the committee's report, the president shall present the same to the Board of Regents.

SEC. 3. *What constitutes a choice.*—The candidate receiving the highest number of votes shall be declared elected.

In case of tie, the tied candidates or their representatives shall draw lots in the presence of the faculty committee on elections, and the successful candidate shall be declared elected.

SEC. 4. *Election contests.*—In case of election contest, the same shall be decided by the President of the University, after both parties have been given an opportunity to be heard.

* The Board of Regents at its meeting held on June 11, 1931, passed the following resolution:

“RESOLVED, That hereafter the election of the two Alumni Regents be held simultaneously every three years on the last Thursday of February, and if this falls on holiday, on the previous day. Provided, however, that the first election under this provision shall be held in the year 1934 and every three years thereafter, and provided further that the terms of the incumbents now in office whose terms expire prior to the holding of said election shall be considered extended to said election.

UNDERGRADUATE COURSES

1. ADMISSION

There are three methods of admitting students to the University. (1) By certificate and examination combined; (2) by certificate alone; and, (3) by transfer from another college or university of recognized standing.

(1) *By certificate and examination combined.*—Applicants for admission to the Colleges of Liberal Arts and Engineering, the School of Pharmacy, the Junior College of the University of Cebu, the Northern Luzon Junior College in Vigan and the Colleges of Education, Law, and Medicine, are required to take an entrance examination in addition to the entrance requirements prescribed in these colleges and schools. The subjects called for in this examination (Type A for Liberal Arts, Engineering, Pharmacy, and the Junior College of the University in Cebu, and Type B for Education, Law, and Medicine) are found on pages 27, 28 and 29. Persons taking this examination must fill in U. P. Form 3, and must file with the Registrar's office a transcript of their record in the schools they have previously attended at least two weeks before the date set for the examination. A fee of two pesos is charged for the entrance examination.

(2) *By certificate alone.*—Admission by certificate applies only to the Colleges of Agriculture and Veterinary Science, the Graduate Department, the Schools of Hygiene and Public Health, Forestry, Fine Arts, and the Conservatory of Music.

(3) *By transfer from other colleges and universities.*—A person who has been admitted to another college or university of recognized standing will be admitted to this University upon presenting a certificate of honorable dismissal and proper credentials from the institutions from which he comes and upon passing such examinations as may be required by the University.

Every applicant for admission to the University, in case he has previously attended some other college or university but did not graduate, must file with the registrar of the University a certificate of his honorable dismissal from that institution.

For privileges extended to candidates presenting on admission more than the required amount of entrance subjects, see page 31, "Admission to Advanced Standing."

2. ENTRANCE REQUIREMENTS

a. *General entrance requirements.*—Students entering the Colleges of Liberal Arts, Engineering, Veterinary Science, Agriculture, the Schools of Pharmacy, Surveying, Forestry and Nursing, the Summer School, the Junior College of the University in Cebu, and the Northern Luzon Junior

College in Vigan must be graduates of a four-year high school recognized by the Secretary of Public Instruction, or must have completed an equivalent education calling for at least 16 units of credit. These applicants must present for entrance the following subjects:—

GROUP A

	Units
1. English	5
2. History	2
3. Mathematics	2½
4. Biology	1
5. Physics or Chemistry	1
<hr/>	
Total	11½

Provided that students entering the College of Engineering must present an additional ½ unit in solid geometry.

GROUP B

To make up the total number of high-school units required for entrance history, government, botany, zoölogy, chemistry, physiology, mathematics, language, literature, economics, general science, geography, psychology, pedagogy, agriculture, bookkeeping, business law, domestic science, drawing, manual training, or music may be offered.

b. *College of Education*.—Students matriculating in the College of Education must have completed a four-year secondary course and the one-year preparatory education course as given in the College of Liberal Arts of this University or in another college or school of collegiate standing recognized by the Secretary of Public Instruction. This course must consist of at least thirty-four semester hours of work in liberal arts and science.

c. *College of Law*.—Students entering the College of Law must have completed a four-year secondary course recognized by the Secretary of Public Instruction and the two-year preparatory law course given in the College of Liberal Arts of this University or in another college or school of collegiate standing recognized by the Secretary of Public Instruction. This preparatory course must consist of at least sixty semester hours in liberal arts and science.

d. *College of Medicine*.—Students entering the College of Medicine must have completed a four-year secondary course recognized by the Secretary of Public Instruction and the two-year preparatory medicine course as given in the College of Liberal Arts of this University or its equivalent. This preparatory course must consist of at least sixty semester hours of work distributed as follows:

English Composition and Literature.—The usual introductory college course of six-semester hours, or its equivalent is required.

German or French.—A reading knowledge of either one of these languages is required. The ground covering in collegiate courses of at least twelve semester hours represents the training considered necessary to meet this requirement.

Physics.—Eight-semester hours are required, of which at least two must be laboratory work.

Chemistry.—Twelve-semester hours are required, of which at least eight-semester hours must be in general inorganic chemistry, including four-semester hours of laboratory work and four-semester hours in organic chemistry, including two-semester hours of laboratory work. Work in qualitative analysis may be counted as general inorganic chemistry.

Biology.—Eight-semester hours are required, of which four must consist of laboratory work. The requirement may be satisfied by a course of eight-semester hours in either general biology or zoölogy, or by courses of four-semester hours in zoölogy, or by courses of four-semester hours each in zoölogy and botany, but not by botany alone.

e. *School of Hygiene and Public Health*.—Applicant must be a duly qualified physician. He must have a doctor of medicine degree from a duly recognized medical school. The courses offered are designed primarily for graduates of medicine who wish to prepare themselves for public health work in the Tropics, particularly in the Philippines."

f. *Students entering the College of Agriculture*.—High-school graduates seeking admission to this college may take a general course in agriculture leading to the degree of bachelor of science in agriculture or the bachelor of science in animal husbandry course or the bachelor of science in sugar technology course or may enroll for the combined animal husbandry and veterinary curriculum.

g. *School of Forestry*.—The minimum requirement for admission to this school is the completion of a standard four-year high school course or its equivalent. Holders of the Ranger's certificate from this School with not less than two years of field experience in the Bureau of Forestry, and candidates from other institutions having the equivalent training and experience in forestry subjects, will also be admitted.

h. *Conservatory of Music*.—Any student who possesses musical ability and talent may be admitted to the Conservatory; but students who intend to work for the degree of Bachelor of Music must be at least high school graduates and holders of a Teacher's Certificate in Music.

i. *School of Fine Arts*.—The minimum requirement for admission to this School is the completion of the intermediate course as prescribed by the Bureau of Education. Students who have shown special aptitude in fine arts, but who do not fulfill this requirement, may also be admitted to the School.

SCHOOL OF PUBLIC HEALTH NURSING

Applicants seeking admission to this school must meet these entrance requirements: (1) must have completed a standard four-year high school course or its equivalent; and (2) must be duly registered nurses. Foreign students must obtain their certificates as registered nurses either from their own country or from the Philippines.

3. ENTRANCE DEFICIENCY

Students deficient in any of the subjects required for admission who may, in spite of such deficiencies, be admitted to any college by the faculty concerned, *must make up all deficiencies within one year.*

4. ENTRANCE EXAMINATIONS

a. *Type A*.—Besides graduation from a four-year high school, students intending to matriculate in the College of Liberal Arts, College of Engineering, School of Pharmacy, School of Surveying, in the Junior College of the University in Cebu, or in the Northern Luzon Junior College in Vigan are required to take the Type A examination. This examination consists of the following subjects:

<i>Subjects</i>	<i>weight</i>
English and Composition	200
Mathematics	100
History	100
Physics	100
Biology	100
Intelligence Test	100
Total	700

However, students applying for admission to the College of Engineering who have completed at least two years of an engineering course in an institution recognized by the Secretary of Public Instruction, and applicants who are holders of the title of Associate in Arts from institutions recognized by the Secretary of Public Instruction and who are seeking entrance into the College of Liberal Arts, are exempt from this examination. Provided, however, that whatever advanced credits may be given them shall be determined by the department heads concerned in accordance with the existing rules of the University.

No student failing in Mathematics and Physics will be admitted to the College of Engineering, and in ranking the general average for admission to this college, Physics and Mathematics shall have the same weight each as English.

Students intending to matriculate in the College of Liberal Arts but fail in the entrance test in Mathematics are required to take and pass Mathematics A if they intend to take further work in Mathematics. Those who fail but do not intend to take further work in Mathematics are required to remove this deficiency within one year either by passing the examination in Mathematics A at the end of each semester during the regular examination week or by taking and passing Mathematics A as given in this University.

Students who fail in the entrance test in Physics must take and pass Physics A before they can be admitted to any class in college Physics.

In addition to the preparatory collegiate work prescribed for entrance into the Colleges of Education, Law, and Medicine (see page 25) the applicant must take the Type B examination as outlined below:

b. *Type B*.—(1) For entrance into the College of Education, the following subjects are prescribed:

GENERAL INFORMATION

<i>Subjects</i>	<i>weight</i>
English	100
Laboratory science (Either Physics, Chemistry, Botany, or Zoölogy)	100
Social Science group (Either History, Economics, Pol- itical Science, or Sociology)	100

Holders of a four-year college degree or higher granted by an institution recognized by the Secretary of Public Instruction are exempt from this examination; provided, however, that whatever advanced credits may be given them shall be determined by the department heads concerned in accordance with the existing rules of the University.

(2) For entrance into the College of Law, the following subjects are prescribed:

<i>Subjects</i>	<i>weight</i>
English:	
Composition	100
Essay Writing and Argumentation	100
Social Science group, and three of the following:	
History	}
Economics	
Political Science	
Sociology	
Psychology	
Logic	
Spanish	300

Valedictorians and salutatorians and graduates with honors from a preparatory law course or its equivalent, and holders of a four-year college degree or higher granted by an institution recognized by the Secretary of Public Instruction are exempt from this examination.

(3) For entrance into the College of Medicine the following prescriptions are made:

1. The applicants will be examined in physics, chemistry, zoölogy, English, and either German or French.

2. Laboratory tests will be given in physics, chemistry and zoölogy.

3. The answers of the applicants in the subjects in which they will be examined (physics, chemistry, zoölogy, English, and either German or French) will be rated on the basis of 100 per cent each.

4. The average rating obtained by each applicant will be raised by 2 points for every 5 to 6 college credits an applicant presents in psychology, logic, advanced zoölogy, quantitative chemistry or social science; and by 1 point for every 5 or 6 college credits in botany, mathematics, additional zoölogy, additional chemistry, philosophy, and drawing. However, credits less than 3 in any of those subjects or in excess of 5 or 6 in the same subjects, except in zoölogy and chemistry, will not be considered. Provided, however, that any point or credit to be earned under this clause

(4) shall be authorized only for such subject or subjects submitted beyond the requirements called for in the preparatory medical course or its equivalent.

5. The following classes of students will be exempt from the entrance examination:

a. Those taking the combined arts-medicine course in the University of the Philippines.

b. Those holding the degree of Bachelor of Science, major in biology from any college or university authorized by the Secretary of Public Instruction; provided that they have presented for the said degree a total number of 130 units (one unit entails one hour lecture-recitation or three hours laboratory work a week for a semester; 17 weeks) distributed as follows:

Minimum requirement in English	12	units
Minimum requirement in Language (French, German, Latin, Spanish, Japanese, Chinese, Philippine Linguistics)	18	"
Minimum requirement in the sciences (Astronomy, Botany, Chemistry, Geology, Meteorology, Geography, Physics, Physiography, Experimental Psychology, Zoölogy, Mathematics, Physical Anthropology)	30	"
Minimum requirement in humanities (Anthropology, Economics, Education, History, Library Science, Philosophy, Political Science, Psychology, Sociology, Social Science 1)	21	"
Additional units in major subjects chosen by the major department	37	"
Free electives to be chosen by the student	6	"
Military Science and Tactics (2)	6	"
	130	"

"And, Provided further, that of these 130 units the following subjects or their equivalents, yielding the number of units and requiring the time listed below have been presented for the degree:

Eng. 1—6 units, 1 yr. (3 hrs. lect. rec. a week)
French 2 (or German 1) 6 units, 1 yr. (3 hrs. lect. rec. a week)
Chem. 23—10 units, 1 yr. (3 hrs. Lect & 6 hrs. lab. a week)
Chem. 26—10 units, 1 yr. (3 hrs. lect. & 6 hrs. lab. a week)
Chem. 27—5 units, 1 sem. (3 hrs. lect. & 6 hrs. lab. a week)
Bot. 1—5 units, 1 sem. (3 hrs. lect & 6 hrs. lab. a week)
Phys. 2—8 units, 1 yr. (3 hrs. lect & 3 hrs. lab. a week)
Zoöl. 1—5 units, 1 sem. (3 hrs. lect. & 6 hrs. lab. a week)
Zoöl. 21—5 units, 1 sem. (3 hrs. lect. & 6 hrs. lab. a week)
Math. 7—3 units, 1 sem. (3 hrs. lect. rec. a week)
Math. 8—3 units, 1 sem. (3 hrs. lect. rec. a week)
Soc. Sc. 1 (or Hist. 2) 3 units, 1 sem. (3 hrs. lect. rec. a week)
Soc. Sc. 2 (or Sist. 5) 3 units, 1 sem. (3 hrs. lect. rec. a week)

5. ADMISSION OF SPECIAL STUDENTS

(1) Persons over 20 years of age may, under certain circumstances, even without satisfying the entrance requirements, be admitted as special students not candidates for degrees. The applicants must give evidence of ability to do creditable work and their applications for admission must be approved by the department heads and the Dean of the College concerned; but they shall not receive any college credit for work done in this University; however, they shall be reported as having completed "satisfactorily" or "unsatisfactorily" the subject or subjects in which they are registered at the end of the given semester.

(2) That students admitted to any college or school of the University who have not fulfilled the minimum entrance requirements in the given college or school shall be classified as SPECIAL STUDENTS.

(3) That for purposes of this rule, the *minimum entrance* requirements in the different colleges and schools of this University will be as follows:

College of Law.—Completion of an approved four-year secondary course, and an approved two-year preparatory course consisting of sixty semester hours in liberal arts and science.

College of Medicine.—Completion of an approved four-year high school course and an approved preparatory course consisting of at least sixty semester hours distributed as follows:

English Composition and Literature.—The usual introductory college course of six-semester hours, or its equivalent is required.

German or French.—A reading knowledge of either one of these languages is required. The ground covering in collegiate courses of at least twelve-semester hours represents the training considered necessary to meet this requirement.

Physics.—Eight-semester hours are required of which at least two must be laboratory work.

Chemistry.—Twelve semester hours are required, of which at least eight-semester hours must be in general inorganic chemistry, including four-semester hours of laboratory work and four-semester hours in organic chemistry, including two-semester hours of laboratory work. Work in qualitative analysis may be counted as general inorganic chemistry.

Biology.—Eight-semester hours are required, of which four must consist of laboratory work. The requirement may be satisfied by a course of eight-semester hours in either general biology or zoology, or by courses of four-semester hours each in zoology, or by courses of four-semester hours each in zoology, and botany, but not by botany alone.

College of Education.—Completion of an approved four-year secondary course and an approved preparatory course consisting of at least thirty-four semester hours in arts and science.

Colleges of Liberal Arts, Engineering, Agriculture and Veterinary Science, Schools of Pharmacy and Surveying, and Junior College.—Completion of an approved four-year secondary courses.

That in schools and colleges wherein an entrance examination has been prescribed by the University Council, the taking of this entrance examination shall be considered as a part of the minimum entrance requirements.

That in the other colleges and schools of this University not herein specified, the existing entrance requirements shall be considered as the minimum entrance requirements.

That special students will not be allowed to register for more than two years and to enroll for more than nine credit hours a week in class-

room or laboratory work except by special permission of the dean concerned; provided, however, that students who have met the academic requirements specified in section (3) and who are admitted to any college mentioned, at the beginning of either the first or the second semester as special students, shall be given credits for the subjects completed "satisfactorily" upon qualifying for entrance at the next test to be given for the purpose.

6. FOREIGN STUDENTS

Applicants for admission coming from foreign countries should bring complete official credentials.

They are exempt from the entrance examination; provided (1) that their pre-collegiate training is the same or at least equivalent to that called for in the entrance requirements of the college or school where admission is sought; (2) that there is a place for them in the given college or school; (3) and that their connection with this Institution shall immediately terminate should their work in the first semester of their residence be unsatisfactory.

7. ADMISSION TO ADVANCED STANDING

When a student matriculates in any college or school, he shall be granted advanced credit upon presentation of credentials showing that he has attended and passed in some other institution of collegiate standing courses fully equivalent to those given in this University for which advanced credit is sought. Advanced credit may be either general or specific; provided that whenever specified credit is awarded, the person making the award should name the particular subject or subjects for which advanced credit is given.

Advanced credit may be awarded either by the Registrar or by the heads of departments concerned, provided that the Registrar shall award advanced credit only to students graduated from an institution recognized by the University Council and only for subjects listed in the course or courses duly recognized. The heads of the departments concerned shall award advanced credit to all applicants from unrecognized institutions, and to those from recognized institutions who have taken part of, but have not completed, the entire courses recognized; provided that the award of advanced credit by a department head shall be made only at the request of the dean of the college where the applicant desires to register or is registered and upon passing on the part of the applicant an examination to be given for the purpose.

Application for advanced credit shall be made to the registrar or to the dean of the college concerned not later than July 15 after matriculation. Upon receipt of an application, the deans shall cause the proper department head to examine the applicant or applicants. This examination shall be held on or before July 31, and its result shall be reported to the dean and the registrar not later than August 1 of the same year. Students who fail to take these examination in the first of their residence may do so the following year, but no examination for advanced credit may be held between August and May of each year, unless specially authorized by the faculty concerned.

Provided, however, that no advanced credit shall be counted towards graduation within the same academic year in which the advanced credit is given except in the case of students admitted to the last year of any course, and in that case the total units of advanced credit that may be granted shall not exceed the equivalent of one academic year's work. In the case of students taking a three-year course, no advanced credit for more than two years of academic work or its equivalent shall be granted, and three years of academic work or its equivalent in the case of students admitted to a four-year course, etc.

8. DEPARTMENTS OF ADMINISTRATION AND INSTRUCTION

For purposes of administration, the University is divided into colleges and schools. Each college constitutes an independent administrative unit empowered to offer courses of instruction and grant degrees, certificates, or titles. Another administrative unit is the school which is also empowered to offer courses of instruction and grant degrees, certificates, or titles under the immediate direction of the director of the school but subject to the control of the dean of the college to which it is attached.

For purposes of instruction, the colleges and schools of the University are divided into departments, each of which functions as an independent unit of instruction under the Head of the Department or, in case of a department without a duly appointed head, under the dean of the college to which the department belongs.

9. REGISTRATION OF STUDENTS

Students in all undergraduate courses must register for work in each college at the time prescribed by their college. To promote prompt registration, a fee of ₱5 is charged those who seek to register later than the specified date of registration unless previously excused by the president of the University.

All fees and deposits must be paid on matriculation and before admission to classes.

No person will be admitted as a student to the exercises of any instructor except as authorized by the official certificate of registration furnished to each student by the dean or registrar.

10. CREDITS

One university unit of credit is one hour lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and, in the technical courses, three hours of drafting or shop work, are regarded as the equivalent of one recitation or lecture.

No student registered in any college or school of the University will be allowed to take more than eighteen non-laboratory units or twenty-one units including laboratory work during each semester, or nine non-laboratory units during each summer: *Provided, however,* That this rule shall not affect or alter any existing course duly approved by the University Council and the Board of Regents in which more than twenty-one units are required.

11. GRADES OF SCHOLARSHIP

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such way as the instructor may determine, that he is performing the work of the course in a satisfactory manner.

The results of examinations, together with class work, will be ranked and reported in five grades—1, 2, 3, 4, 5. A grade of 1 denotes marked excellence. A grade of 2 indicates that the student's work has been thoroughly satisfactory. A grade of 3 denotes a pass. A grade of 4 denotes a condition. Courses in which students have obtained a grade of 4 will not be credited to them, except upon passing a second examination. A grade of 5 indicates failure and the necessity of repeating the entire course. The report in case of absence from the examination, or failure to perform any of the allotted work in a given course, is *incomplete*. Work so required must be made up within a year.

A student who has received a grade of 2 or a grade of 3 in a given subject is not allowed to take a second examination for the purpose of improving his grade.

No student of the University shall, directly or indirectly, ask any person to recommend him to his professor or professors for any grade in his class record, examination paper, or final report of grades. Any student violating this rule shall lose all credit in the subject or subject regarding which such recommendation is made. The fact that a student is thus recommended shall be *prima facie* evidence that the recommendation is made at the request of the student concerned. (84th meeting, U. P. Council, November 5, 1927)

12. CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking one examination during the week preceding the opening of the following session or any other examination required by the faculty without the payment of a fee. Examination may be held at other times only by special permission of the faculty and on payment of ₱10, provided that all conditions must be made up before the opening of the following session.

Students not in residence and who are permitted to take an examination for removal of condition shall be required to pay the registration fee of ₱5 and such other fees as may be required by the Registrar.

Any student who is reported as having failed in a given subject of study or after being conditioned, does not pass a second examination for the removal of the condition, will have to repeat every such subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit him to review a subject in which he is thus conditioned with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or semester.

Any student who has been reported with a grade of *Incomplete* or a grade of 4, who does not within a year better such grades, will automatically be recorded as having failed in such subjects. Any student who, for rea-

sons of poor scholarship, is dropped with the approval of the Dean from any subject of study by the instructor, will be given a grade of 5 in that subject, unless the faculty shall otherwise determine.

No candidate is to be recommended by the Council for any degree, title, or certificate until all required examinations have been passed.

13. MILITARY SCIENCE AND PHYSICAL TRAINING

Military Science and Tactics is a required subject in the curricula of all the colleges of the University. It is a prerequisite for graduation and must be completed during the first two years of residence in the University. In case a student, after two years of his college work, is conditioned in military science for one semester or more, said student shall not be permitted to enroll in the third year of his course without taking military science unless exempted therefrom by competent authority. This requirement does not apply to schools like the Conservatory of Music and the School of Fine Arts. Students of the Schools of Pharmacy and Surveying are required to complete only one year of military science. In addition to Military Science, all students of the University, except those exempted by proper authority, are required to take one hour a week of physical training during their first four years of residence. Attendance is governed by the same rules applicable to other courses. Examinations are held and grades reported.

Beginning the academic year 1928-1929, students who shall be exempted from military science by the exemption board shall be required to take, in lieu of this exemption, a corresponding number of units of work to be taken in some academic department approved by the adviser and the dean; provided that in the evaluation of the equivalent of military science, each semester's work in this subject shall correspond to $1\frac{1}{2}$ units of academic work; and provided further that no subject or subjects taken prior to the granting of exemption by the authorities concerned shall be allowed as substitution for military science.

14. ATHLETIC ASSOCIATION OF THE UNIVERSITY OF THE PHILIPPINES

Every student, registered in any of the colleges or schools of the University, will pay an athletic fee of ₱1.50 a semester, which will be turned into the treasury of the athletic association.

Each student becomes, upon payment of this fee, a member of the University Athletic Association. Payment of the fee entitles the student to admission to all University athletic contests. The government of this association is vested in a board of control, which consists of a president, a secretary-treasurer, and seven members, elected by the University, and seven student representatives from the colleges of the University elected by the student bodies of the colleges concerned. The physical director of the University is a member ex officio of the board of control. The board of control shall supervise the management and finances of every athletic organization representing the University.

15. TUITION FEES

College of Liberal Arts—P30 a semester.

School of business Administration—P30 a semester.

College of Education—P30 a semester.

Northern Luzon Junior College—P30 a semester.

University High School—P25 a semester for the first two years of the course, and P40 a semester for the last two years.

In case a U. P. High student does not carry a full load, he shall pay tuition fee in accordance with the following schedule: (1) Not more than two subjects, P20 a semester; (2) more than two, full tuition.

Liberal Arts and Education including Northern Luzon Junior College students who do not carry a full load shall be charged on the basis of P2 per unit of credit, provided that the courses taken do not exceed fifteen units. Students taking more than fifteen units of credit shall be considered as carrying the full load, and shall be required to pay tuition in full.

College of Law—P50 a semester; Review Course, P50; Gradaute course P50 a semester. Any law student who does not carry a full load shall pay tuition fee in accordance with the following schedule: (1) Thesis or five clock hours of work or less a week, P30; (2) more than five clock hours of work but not exceeding 10, P40; (3) more than ten, P50.

College of Medicine—P50 a semester. Any medical student who does not carry a full load shall pay tuition fee in accordance with the following schedule: (1) Thesis or five clock hours of work or less a week, P30; (2) more than five clock hours of work but not exceeding 10, P40; (3) more than ten, P50.

School of Pharmacy P30 a semester.

School of Hygiene and Public Health—P40 a trimester. Laboratory fee of P5 a trimester for each subject carrying with it laboratory work is also charged.

College of Engineering—P30 a semester.

School of Surveying—P30 a semester.

Junior College of the University (Cebu—P30 a semester.

School of Forestry—P15 a semester for the degree course.

Any student enrolled in the College of Engineering, Schools of Pharmacy, Surveying, or in the Junior College of the University in Cebu, who does not carry a full load shall pay tuition fee in accordance with the following schedule: (1) Thesis or five clock hours of work or less a week; P10; (2) more than five clock hours of work but not exceeding 10, P20; (3) more than ten, P30.

School of Fine Arts—P15 a semester for the advanced course; and P6 a semester for the elementary course.

Conservatory of Music—P30 a semester. A fee of P15 a semester is charged for instrument. Special students shall pay a fee of P12 a month, for which they shall receive not more than two hours of instruction a week. A fee of P1 a month is also charged for one hour daily practice on the piano.

Summer School—P2.50 per unit of credit.

College of Agriculture Summer Extension Course—Tuition fee—P6.00. A fee of P1.00 is also charged for each certificate issued upon completion of the course.

Graduate Department—P40 a semester. In case a graduate student does not carry a full load, the computation of his tuition fee a semester will be on the following basis: (1) Thesis or five clock hours of work or less a week, P15; (2) more than five clock hours of work but not exceeding 10, P30; (3) more than ten, P40.

16. MISCELLANEOUS FEES

A yearly fee of P5 is charged for library privileges.

A fee of P10 a semester is charged for library privileges in the College of Law.

A microscope fee of P5 a semester is charged in the College of Medicine and in the School of Pharmacy.

A fee of P25 is charged for all diplomas for degrees, and P10 for the title of Associate in Arts, for the degree of Graduate in Nursing, for the certificate in Sugar Technology, for the title of Associate in Surveying, and for other diplomas and certificates of noncollegiate standing granted by the University.

A fee of P10 is charged for each special examination. (See "Removal of Condition.")

An athletic fee of P1.50 a semester is charged in all colleges and schools. Every student enrolling for one or two or more courses during summer either in Manila or in the Los Baños colleges will be charged P1.50 for athletic fee.

A medical fee of P2 a semester is charged to all students of the University.

An entrance examination fee of P2 is charged to every student who takes either the Type A or Type B examination.

An entrance fee of P5 is charged to every new registrant upon his admission to the University.

A registration fee of P5 a semester is charged in all colleges and schools granting degrees. This fee does not apply to the Conservatory of Music, the University High School, the School of Nursing, the School of Fine Arts, the School of Forestry (Ranger Course), and the Junior College of the University in Cebu.

A fee of P5 is charged for late registration.

A subscription fee of P1 a semester is charged for the "Philippine Collegian," and P0.50 for the University Student Council.

For change of matriculation; that is, enrollment for additional subject, substitution of one subject for another, or for dropping of a subject, a fee of P1 is charged.

A fine of P2 is charged for unauthorized dropping of subject. Upon failure of the student to pay this amount, the same will be deducted from his deposit.

A fee of P5 is charged for change of registration from one college to another.

LABORATORY FEES

A fee of ₱5 a semester is charged in all laboratory subjects giving five units of credit a semester except Chemistry in which a fee of ₱15 is charged, and ₱10 a semester in those giving more than five units of credit a semester.

17. DEPOSITS

A deposit of ₱20 is required in the College of Medicine.

Each student of the Colleges of Education, Liberal Arts, Engineering, Agriculture, and Veterinary Science and the Schools of Pharmacy, Surveying, Hygiene and Public Health, the Junior College of the University Cebu and the Northern Luzon Junior College (Vigan), and the Rural High School, is required to deposit ₱15 in addition to the regular fees with the Secretary-Treasurer of the University on matriculation. Each U. P. High School student taking laboratory course is also required to deposit ₱10.

These deposits are for the purposes of covering any loss of apparatus, supplies, books, etc., or any damage to University property which may properly become a charge against the students.

Whenever a charge is made against the deposit of a student, he is automatically required to deposit an additional sum sufficient to bring the deposit up to the original amount. At the beginning of each semester, as a prerequisite to registration, each student must be prepared to deposit such amount as may be necessary to bring his deposit up to the original amount of ₱15 or ₱20, in case any deduction has been made on account of loss or breakage.

This deposit is to be refunded upon the student's separation from the University and upon compliance with the following requirements:

(1) To fill in U. P. Form 46, Property Clearance, a copy of which can be secured from the deposit clerk, Cashier's office, Room 100, University Hall. The deposit clerk will indicate on the form the departments where the student has to secure clearance.

(2) To return the U. P. Form 16, application for library card for the Philippine Library and Museum, if the student has any.

(3) To secure an honorable dismissal from the Dean. This is not required of graduating students.

With the property clearance duly certified to by the departments concerned and honorable dismissal issued by the Dean, the student should then go back to the deposit clerk who will issue the corresponding check.

18. STUDENTS' EXPENSES

The expense for textbooks, instrument, etc., varies from ₱25 to ₱100 per annum.

The cost of living in Manila varies from ₱25 to ₱40 a month.

A fair estimate of the yearly expenses of the student is from ₱400 to ₱800 a year, but much depends on the personal taste of the student.

19. REFUND OF FEES

Students who have paid their tuition and laboratory fees and who leave the University are entitled to a refund of their tuition and laboratory fees in accordance with the following schedule:

	<i>Per cent</i>
Within one week after registration	80
During the second, third, and fourth weeks after registration	50

After the fourth week and thereafter No refund.

Laboratory fees will not be refunded after one week from the date of registration where change is made from one course to another.

20. RULES ON ATTENDANCE

1. The rules on attendance herein laid down shall be followed in all the schools and colleges including the Departments of Military Science and Physical Education.

2. No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean or director of the college concerned; provided, that no student may matriculate in a college or school or enroll in a course later than two weeks after classes begin. A college or school, or department, to meet special conditions, may shorten this period of extension.

3. A student, who for unavoidable cause, is obliged to absent himself from any college or required university class must obtain an excuse written on U. P. Form No. 97 from his dean or director to be presented to his instructors.

4. Excuses for absence shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

5. Excuses are for time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

6. When the number of hours lost by absence by a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any other scheduled work in one subject for that semester, he shall be dropped from the class roll with a grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

7. Instructors shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

8. A student shall be given a grade of incomplete in a course if he is absent from the final examination, provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of his dean or director.

9. Any student who drops a course or withdraws from a college or school without the approval of his dean or director shall be subject to curtailment of registration privileges. Prolonged leave of absence must be sought by written petition to the dean or director, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired; provided, however, that student granted leave under this clause shall be subject to the scholarship rules of the college or school where he is duly registered. Indefinite leave of absence shall not be granted.

10. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to his dean or director. If the petition is granted the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall file with the dean or director of his college or school. Without such petition and favorable action no record of honorable dismissal will be made.

11. Attendance in the Graduate School shall not be governed by the foregoing rules.

12. Certificates of absences due to illness must be secured from the University physician.

21. THE UNIVERSITY HEALTH SERVICE

The object of the University Health Service is not only to take care of the students who are ill but also to help maintain the physical health and efficiency of those who are well.

A medical examination is required of each student once a year, generally at the opening of the school in June, and at any other time when requested by competent authorities in the University.

A periodic physical examination is also required of each student during his residence in the University.

The University Health Service performs medical examination for the issuance of certificates needed by students who apply for exemption from military science or physical education on the ground of physical disability.

Upon payment of the required medical fee of P2 a semester, each student will be entitled to medical service like dispensary treatment and unlimited hospitalization at the Infirmary. If a student is sick and is unable to come to the dispensary for treatment, he can request one of the attending physicians of the Infirmary to visit him in his home or dormitory. If he is confined in another hospital, the physicians of the Infirmary will be available if he so desires. Post-operative cases from other hospitals may be transferred to the Infirmary if those cases have been operated on by one of the members of the medical staff of the Infirmary.

Medicines for common illness are given free, but expensive medicines such as those used for injections including patent medicines, laboratory and X-ray examinations are to be borne by the students.

All cases are admitted to the Infirmary except contagious and infectious diseases like typhoid, dysentery, diphtheria, cholera, and eruptive fevers.

All illness requiring absence from college should be reported to the University Health Service within three days after the absence has been made in case the student prefers to stay at home or is being attended by his or her private physician. The notification may be made by telephone, sent through a messenger, or by mail. Sick excuses are accepted only on recommendation of the University Health Service.

The offices of the University Health Service are located at the University Infirmary, Padre Faura, in front of the University Hall, Telephone No. 5-72-22. It is open from 7 a.m. to 12 'm. and 1 to 5 p.m.; Saturdays from 7 a.m. to 1 p.m. A physician is detailed for a 24-hour service to attend to all cases.

Inoculation against typhoid, dysentery, cholera, and smallpox is not compulsory but is strongly recommended for all students.

Besides the four part-time physicians, the University Health Service carries five nurses in its hospital staff on full-time basis including the Chief Nurse.

The University Health Service also gives courses in personal and community hygiene to all freshmen except first year medicine.

22. SCHOLARSHIPS

A valedictory scholarship with free tuition fee for a period of one academic year is granted to the student highest in rank (valedictorian)

graduating from a standard four-year high school, trade school, commercial school, or other private school of the same standing in the Philippines.

A salutatory scholarship with free tuition fee for a period of one academic year, is also granted to the student second in rank (salutatorian) graduating from the schools mentioned in the preceding paragraph.

Formal application for these scholarships should be made in writing before registration, and the application should be accompanied by a certificate signed by the principal or by the director of the school from which the applicant has graduated. These scholarships are granted only on condition that the student meets all the requirements for admission to this University.

A cum laude scholarship with free tuition fees for a period of one academic year is granted to students of this University who, on graduation, receive any degree with "cum laude" or better. This scholarship will be granted in any college or school of the University in which the student desires to continue his studies.

The Board of Regents, at the meeting held on October 26, 1923, upon recommendation of the Executive Committee passed a resolution providing that the University grant scholarships in the form of free tuition for one semester to the first two students (carrying full load and duly registered in the University) who shall have attained the highest scholastic standing in their respective classes (first year, second year, etc.) in any given year in any college or school whose enrollment is less than 400, or to the first four students holding the highest scholastic work where the enrollment is over 400.

There are twenty scholarships provided for in Act No. 2302 of the Third Philippine Legislature for the College of Veterinary Science. In addition, there are several municipal and provincial scholarships available to students in this college including two Limjap scholarships. The Veterinary faculty scholarship committee shall decide the distribution and selection of Government scholarships which shall be awarded on the basis of the following points:

1. The student shall be at least 18 years old. He must be a regular student of the College of Veterinary Science. He must have at least an average of 2 (80 per cent or above, and posses a high scholastic and moral standing.

2. No student shall be awarded a scholarship unless he fulfills the requirements of the above paragraph. Any delinquent subject in his record is sufficient to disqualify him.

3. The awarding of scholarships to members of the first-year class shall take place on August 15, thereby allowing a period of probation during which instructors will have an opportunity of becoming acquainted with the students through personal contact and of appraising their scholastic abilities. With the upper classmen, however, the awarding of pension shall be made sortly after the opening of classes and in accordance with their records of the preceding term, the highest general average, other things being equal, shall be the deciding factor.

4. The decision of the faculty scholarship committee shall, however, be subject to the final approval of the faculty of the College of Veterinary Science.

5. Scholarships are awarded every semester.

6. Scholarships that are not utilized during the academic year shall be granted to the juniors as allowance in case their services are engaged by the Bureau of Agriculture during summer vacation.

REGULATIONS GOVERNING THE BAILON-DE LA RAMA SCHOLARSHIP

I. General Rules

1. Awards of any scholarship under this fund shall be made to those who obtain the highest general average in examinations given for the purpose.

2. Only needy students will be admitted to participate in these competitive examinations, and to prove that they deserve the support, they must submit to the Chairman of the Bailon-De la Rama Scholarship Committee at least two weeks before the date set for the examination, three certificates, one, signed by the Municipal Treasurer of the town in which the applicants reside, another, by the Principal of the High School from which they graduated; and a third by the Provincial Treasurer, showing that they really belong to the class of the needy.

3. All examinations for the Bailon-De la Rama Scholarship will be held on the first Monday and Tuesday of June of each year, or in case of vacancy, at such time as may be set by the Bailon-De la Rama Scholarship Committee.

4. The sum of ₱50 a month will be given to each beneficiary studying in Manila and ₱35 to each beneficiary studying in Los Baños while in attendance at the University for the required study. An additional amount of ₱75 shall be given each beneficiary for expenses of books and tuition at the beginning of each semester.

5. The beneficiary shall continue to hold the scholarship until completion of the course; but the scholarship will be terminated upon failure of the holder thereof in any subject required for the course, or for any reason of misconduct or misbehaviour.

II. Rules Governing Competitive Examinations

1. Qualification of applicants:

a. *Sugar Technology*.—Completion of all entrance requirements for the course leading to the degree of Bachelor of Science in Agriculture and of the preparatory course in sugar technology in the College of Agriculture, University of the Philippines, or its equivalent. (This means that only students who have completed a four-year high school course prescribed by the Secretary of Public Instruction and the one year preparatory course in sugar technology in the College of Agriculture of the University of the Philippines, or its equivalent, will be admitted.)

b. *Medicine*.—Completion of all entrance requirements in the College of Medicine, University of the Philippines, and of the first year of the medical course. (This means that only students who have completed a four-year high school course, the 2-year preparatory medical course, or its equivalent, and the first year of the medical course, will be admitted. It is, of course, understood that students coming from other institutions must have taken the entrance test, type B, for the College of Medicine and qualified for entrance into that college.)

c. *Public Health*.—Completion of all entrance requirements in the School of Hygiene and Public Health, University of the Philippines. (This means that only students who are holders of the degree of Doctor of Medicine from recognized institution of learning will be admitted.)

d. *Engineering*.—Completion of all entrance requirements in the College of Engineering and of the first year of the engineering course. (This means that only students who have completed a four-year high school course and the first year course in Engineering will be admitted. Moreover, students coming from other institutions must have taken type A entrance test for the College of Engineering and qualified for entrance into the college.)

2. Subjects given in the competitive test:

GENERAL INFORMATION

a. *Sugar Technology*.—Those competing for the scholarship in sugar technology will take the test in the following:

<i>Subjects</i>	<i>Weight Per cent</i>
Chemistry	40
Agronomy	20
Mathematics	25
Physics	15

b. *Medicine*.—Those competing for the scholarship in medicine will take examination in the following:

<i>Subjects</i>	<i>Weight Per cent</i>
Gross Anatomy	34
Histology	14
Embryology	7
Neuro-Anatomy	7
Biochemistry	15
Physiology	23

c. *Hygiene and Public Health*.—Those competing for the scholarship in hygiene and public health will take examination in the following:

<i>Subjects</i>	<i>Weight Per cent</i>
Hygiene and Preventive Medicine	30
Bacteriology	20
Parasitology	15
Pathology	10
Sanitary Chemistry	10
Epidemiology	15

d. *Engineering*.—Those competing for the scholarship in engineering will take the test in the following:

<i>Subjects</i>	<i>Weight Per cent</i>
Mathematics (including elementary and college algebra, plane and solid geometry, trigonometry and analytic geometry)	40
English	20
Drawing	20
Elementary Physics	20

SCHOLARSHIP RULES FOR THE CONSERVATORY OF MUSIC

The Board of Regents on February 11, 1927, authorized the creation of five scholarships in the Conservatory of Music with free-tuition and instrument fees to be awarded in accordance with the following regulations:

1. These scholarships are reserved for talented and diligent students of scant means.
2. Formal application for this scholarship should be made in writing, addressed to the Director of the school, containing a curriculum vitae of the applicants at least one month before the beginning of each semester.

3. The application must be accompanied by a certificate signed by one of the parents or the guardian of the applicant and witnessed by two respected citizens of the Philippines testifying to the precarious financial situation of the applicant's family.

4. In the case of an old student of the Conservatory, his teacher shall report in writing to the Director about his ability and diligence.

5. New students who are applying for this scholarship have to submit to an examination before a committee, composed of the Director and four members of the Faculty, which will decide upon their ability, talent, and mental aptitude.

6. Recommendations of teachers for the granting of the privilege of these scholarships to old students shall be approved by the Faculty and Director, who shall transmit the same to the President of the University for final approval. In the case of new students, the decision of the Director and the Faculty, based upon the recommendations of the examination committee, shall be transmitted to the President by the Director for approval.

7. A free-scholarship is valid for one year, and can be renewed at the end of that term after examination.

8. The privilege of free-scholarship granted to a student shall be revoked by the decision of the Faculty, upon recommendation of the Director, if the teacher of the student so recommends and explains to the Director in a written complaint the reason why such privilege should not be continued.

9. It is expected of every recipient of this scholarship that he will do his utmost to show himself worthy of the confidence the Faculty has in him.

23. GRADUATION REQUIREMENTS

No student will be recommended to the University Council for any degree, title or certificate unless he has fulfilled all the requirements called for in his curriculum including Physical Education and Military Science and until all his indebtedness to the University has been cleared. Women students are required to present one unit of credit a semester (for eight semesters) for work done in the Women's Club.

Students who complete their course either in summer or in October may be given certificate to the effect that they have already fulfilled all the requirements for graduation, but their degree will be formally conferred upon them during the regular commencement week in March. The School of Nursing and other colleges and schools of the University granting titles and certificates are allowed to hold commencement in October for its students who complete the work either in summer or at the end of the first semester.

24. TITLES, CERTIFICATES, AND DEGREES

Upon satisfactory completion of a prescribed course of instruction, duly registered students will be granted, on the recommendation of the faculty concerned and subject to the approval of the University Council and the Board of Regents, the appropriate title, certificate, or degree to which such a course leads. The University grants the following titles, certificates, and degrees:

College or School	Degree, title, or certificate conferred	Entrance requirements	Length of course
College of Liberal Arts	Associate in Arts	Completion of high-school course plus the Type A examination.	Years 2
Do	Bachelor of Arts	do	4
Do	Bachelor of Philosophy	do	4
Do	Bachelor of Science	do	4
Do	Bachelor of Science in Chemistry	do	4
Do	Bachelor of Science in Library Science.	do	4
School of Business Administration.	Bachelor of Science in Business Administration.	do	4
College of Education..	Bachelor of Science in Education	Completion of one year pre-education course, beyond high school plus Type B examination.	
Do	Bachelor of Science in Home Economics.	do	3
College of Engineering	Bachelor of Science in Civil Engineering	Completion of high school course plus the Type A examination.	4

GENERAL INFORMATION

TITLE, CERTIFICATES, AND DEGREES—Continued

College or school	Degree, title, or certificate conferred	Entrance requirements	Length of course
Do	Bachelor of Science in Electrical Engineering	.... do	Years 4
Do	Bachelor of Science in Mechanical Engineering	.... do	4
School of Surveying	Associate in Surveying .....	.... do	2
College of Medicine..	Doctor of Medicine	Completion of two-year pre-medicine course beyond high school plus Type B examination.	5
School of Hygiene and Public Health.	Certificate in Public Health..	Completion of Medicine course.	1
School of Pharmacy..	Pharmaceutical Chemist	Completion of high school course plus the Type A examination.	3
Do	Bachelor of Science in Pharmacy	Completion of Ph. C. course	1
College of Law	Bachelor of Laws	Completion of two-year pre-law course or its equivalent beyond high school plus the Type B examination.	4
Do	Master of Laws	Completion of the law course.	1
College of Agriculture	Bachelor of Science in Agriculture	Completion of high school course.	4
Do	Bachelor of Science in Sugar Technology	Completion of high school course and 1st year B. S. Agr. course.	4
College of Veterinary Science.	Doctor of Veterinary Medicine	Completion of high school course.	4
School of Forestry ..	Ranger's Certificate	Completion of two years of high school course.	2
Do	Bachelor of Science in Forestry	Completion of ranger's course plus two year field experience.	(a)
Junior College of the University (Cebu)	Associate in Arts	Completion of high school course plus the Type A examination.	2
Norther Luzon Junior College (Vigan)			
Conservatory of Music	Certificate in piano	For admission to the preparatory course students must be at least 12 years of age; to the advanced course students must be at least 15 years of age.	(b)
Do	Certificate in violin		
Do	Certificate in Science and Composition		
Do	Certificate in Voice culture ..	Male students applying for admission to this course must be at least 18 years old, and female students at least 17.	(c)
Do	Post-Graduate Certificate	Completion of any of the above courses.	2
Do	Bachelor of Music	Teacher's Certificate in Music and High School Diploma.	2
School of Fine Arts	Certificate in Illustration, Cartooning, and Commercial Designing	Completion of one year preparatory course and the intermediate course.	3
Do	Certificate in Painting .....	.... do	4
Do	Certificate in Sculpture .....	.... do	4
Do	Certificate in Engraving .....	.... do	4
Graduate Department	Master of Arts	Completion of a four-year bachelor's degree course	(d)
Do	Master of Science		

a 3 years and 2 summers.

b Preparatory Course—4 yrs; Advanced course—4 yrs.

c 5 years including preparatory course.

d Normally, it takes one year to complete the Master's degree course, but much depends upon the student's work and research ability.

NOTE.—No student in the Conservatory of Music and in the School of Fine Arts will be allowed to graduate unless he has completed at least 2 years of high-school course or its equivalent.

The University of the Philippines shall use for its official academic processions, baccalaureate service, commencement exercises, etc., the style of caps, gowns and hoods patterned after the standard prescribed by the American Intercollegiate Bureau of Academic Costume, as follows:

THE GOWN

The gowns shall be black and of three types, namely:

The Bachelor's gown of stuffs, with long loose, bottom-printed sleeves. The Master's gown of stuff, or silk, with long, closed sleeves, square at the end and coming well below the knee, the wearer's arm extending through an opening, exposing the forearm to the elbow.

The Doctor's gown of stuffs or silk, like a pulpit or judge's gown, with full, round bell-shaped sleeves, faced with velvet five inches wide extending around the neck, over the shoulders and down both sides of the front bottom of the gown.

Three velvet bars (one and one-half inch wide and twelve to fourteen inches long, all ends diamond-pointed) appear on each sleeve; the velvet trimming (i. e. facing and bars, of such department color as to designate the degree of the wearer, except that no velvet trimming shall be used for doctor's degrees granted after completion of courses of studies not exceeding four years.

THE CAP AND TASSEL

The cap shall be of black material, of the regulation four-cornered mortar-board shape of Oxford type.

The tassels shall be of the material and colors as follows:

The Bachelor and Master of Arts and other candidates who are already holders of degrees shall wear black silk tassel on the cap.

Candidates for other degrees shall wear on the cap silk tassel of the color adopted by the department of learning to which their degrees pertain; these departmental colors are:

Arts and Letters	White
Commerce and Accountancy	Drab
Dentistry	Lilac
Engineering	Orange
Fine Arts	Brown
Forestry	Russet
Laws	Purple
Library Science	Lemon
Medicine	Green
Music	Pink
Oratory	Silver Gray
Pedagogy	Light Blue
Pharmacy	Olive
Philosophy	Blue
Physical Education	Sage Green
Science (including Agriculture and Sugar Technology)	Gold Yellow
Veterinary Science	Gray

A gold or gilt tassel on the cap shall be worn by the President, the Deans and Directors, and by the Doctors of Philosophy, Science, Literature and Laws, and by the graduates in Hygiene and Public Health.

THE HOOD

The hoods shall be lined with silk of the official colors of the University of the Philippines. These colors when the hood is properly worn will form three chevrons. The upper and lower chevrons shall be of *forest green color*, and the middle chevron, of *Poinsettia red of deepest shade*.

The hoods are allowed only for the degrees requiring five or more years of studies and shall be edged with a wide velvet band of the proper degree color as designated above under the heading "The Cap and Tassel." The hood corresponding to Hygiene and Public Health shall be edged with a velvet band of *Salmon* color.

The patterns of the hoods shall be as follows:

The Bachelor's hood will be patterned after the standard prescribed by the American Intercollegiate Bureau of Academic Costume with the velvet facing two inches wide of the color denoting the department. The basic material of the hood will be the same as that of the gown.

The Master's hood will be of the same shape as the Bachelor's hood, except that it is longer and that the band of velvet is three inches wide, of the degree color. The basic material on the hood is to be the same as that of the gown.

The Doctor's hood is of a type distinct from that of the Bachelor and the Master. It will be edged with a velvet band five inches wide of the degree color. A flare or panel rests against the body, extending outward and dividing so as to expose to view the chevrons formed by the silk lining denoting the official colors of the University of the Philippines. The basic material is the same as that of the gown.

ALL COLORS USED FOR THE TASSELS, THE SILK LINING AND THE VELVET FACING, BARS AND EDGING, AND ALL GOWNS AND HOODS, BEFORE THEY CAN BE USED, MUST BE SUBMITTED FOR APPROVAL TO THE COUNCIL COMMITTEE ON ACADEMIC COSTUME OR ITS DULY AUTHORIZED REPRESENTATIVES.

Officials of the University and guests participating in the commencement exercises shall wear their own caps and gowns and hoods as used in the universities where they were graduated.

COMMENCEMENT EXERCISES

The commencement exercises for all graduating students of the University, excepting those who are to receive titles and certificates below the Bachelor's degree, are held on the same day and only once a year.

The deans of the different colleges shall present the graduates in their respective colleges, provided, that the directors of the Schools of Pharmacy and Business Administration shall present their candidates in their schools. Other schools under the control of the University will hold a separate commencement on a date as may be fixed by the President on the recommendation of the dean.

Graduate Study

UNIVERSITY COUNCIL COMMITTEE ON GRADUATE STUDIES

Prof. MAXIMO M. KALAW, Chairman
Prof. LEANDRO H. FERNANDEZ, Member
Prof. Jose K. SANTOS, Member
Prof. LEOPOLDO B. UICHANCO, Member
NEMESIO B. MONDIOLA, Member
Prof. FRANCISCO BENITEZ, Member
Prof. PATROCINIO VALENZUELA, Member
Prof. ENRIQUE T VIRATA, Secretary.

Graduate students may register in the University and pursue advanced studies under the direction of the University Council Committee on Graduate Studies, hereinafter usually referred to as the "University Committee," and of the Committee on Graduate Studies of the college in which the major work is to be taken, hereinafter usually referred to as the "College Committee." Work so taken may be regular, leading to an advanced degree, or special, in some particular course, not leading to a degree. Students without a baccalaureate degree or its equivalent may be admitted to graduate courses under restriction.

Under the guidance of the University Committee and the College Committees, students can take in some departments of the Colleges of Liberal Arts, Agriculture, and Education, and in the School Pharmacy graduate courses, leading to the degrees of Master of Arts and Master of Science. For the description of courses which are intended primarily for graduate students, see the catalogues pertaining to these colleges.

The College of Law and the School of Hygiene and Public Health of this University also offer graduate courses, the former grants the degree of Master of Laws and the latter the Certificate in Public Health.

PURPOSE

Regular graduate work is offered primarily to encourage and induce independent thought, to develop the investigative spirit and encourage research, and to prepare the way for specialization in selected fields in which the student has already gained more or less familiarity in his undergraduate work. The Master's degree is intended to denote distinct ability and not merely extra work accomplished. Attendance at lectures, the passing of regular examinations, and formal compliance with prescribed conditions do not necessarily entitle a student to recommendation for a

degree. For this reason, students are admitted as graduate students, and are subsequently admitted to candidacy only after they have demonstrated ability in graduate work. Acceptance as a regular graduate student does not imply necessary acceptance as a candidate for an advanced degree.

ADMISSION REQUIREMENTS

Persons of good moral character who hold baccalaureate or other degrees involving not less than four years of undergraduate work in this University, or equivalent degrees from other Colleges or University acceptable to the University, and persons who present evidence of having had courses equivalent to those required for an acceptable degree, shall be eligible for acceptance as graduate students.

Such students shall be classified as "regular," prospective candidates for master's degrees, and "special," not prospective candidates for such degrees.

FOREIGN LANGUAGE REQUIREMENT

Ordinarily, no applicant will be accepted as a regular student unless he presents evidence of having a reading knowledge of French or German. Spanish may be substituted in the case of students majoring in Education or in any of the social science departments of the College of Liberal Arts; Chinese or Japanese in the case of students majoring in subjects, the references for which are written in Chinese or Japanese; and Dutch in the case of students majoring in Agriculture. These students are required, however, to take at least one year of French or German or its equivalent in addition to the thirty units required for graduation. The applicant will be given oral examination by the corresponding language professor on any subject to be chosen by the major department.

PROCEDURE OF REGISTRATION

REGULAR GRADUATE STUDENTS

Application for registration as a regular graduate student, prospective candidate for a degree, shall be made not less than one full academic year previous to the granting of the degree.

Before the regular period of registration, an applicant for regular graduate courses should see the Chairman or the Secretary of the University Committee in Manila or the Chairman of the College Committee in Los Baños, for application blank form and directions. The application should be submitted to these officials not later than the regular registration period. In exceptional cases, however, an application may be received at a later period at the discretion of the University Committee.

In the case of a student coming from another institution, the application blank shall be accompanied by (1) a certified statement of the nature, date, and source, of the bachelor's degree or other degrees held; (2) a certified detailed statement of all courses taken in the undergraduate curriculum by years, the number of hours devoted to each course, where taken, and the

grades obtained in each; and (3) a statement of good moral character signed by the proper authority of that institution, or by two persons known to members of the College Committee.

All applications received shall be considered by the College Committee who will forward them with a statement of approval and nomination of advisers, or disapproval with reasons therefor, to the University Committee for final action. Applications which are finally approved shall then be forwarded to the Registrar for record and file.

The Chairman of the University Committee will immediately notify the applicant of the action taken.

SPECIAL GRADUATE STUDENTS

A prospective special graduate student should see the Chairman or the Secretary of the University Committee in Manila or the Chairman of the College Committee in Los Baños for application form and directions before the regular period of registration, if possible. The application should be submitted to these officials not later than the regular registration period.

In the case of students coming from another institution, the application shall be accompanied by (1) a certified statement of the nature, date, and source of the baccalaureate or other degrees held; (2) a certified detailed statement of all courses taken in the under graduate curriculum by years, where taken, and the grades obtained in each; and (3) in the case of a student from another institution a statement of good moral character signed by the proper authority of that institution, or by two persons known to members of the College Committee.

The application shall state specifically the course or courses desired to be taken and shall contain a statement of approval by the head of the department in which most of the courses will be taken. The language requirement may be waived if recommended by the department.

All applications received shall be considered by the College Committee who will forward them with a statement of approval and nomination of advisers or disapproval with reasons therefor, to the University Committee for final action. Applications which are finally approved shall then be forwarded to the Registrar for record and file.

A special student desiring to be re-registered as a regular student shall make formal application in the regular manner, fulfilling all requirements at the time of re-registration, not less than one full year previous to the granting of the degree. He and his adviser will then prepare his final curriculum.

Credit toward a degree shall not be given for courses taken while a special student, except with the approval of the heads of departments concerned and the graduate studies committee.

PLAN OF STUDY

The student should choose as his major course a subject with which he is already more or less familiar.

Before filling out the application, the student and the head of the department where he intends to major or his authorized representative shall confer and draft a detailed statement of work to be taken, including the formal courses and the research work on which the thesis is to be based. This statement of work shall be accompanied by a tentative outline of the thesis showing the nature, purpose, and scope of the work. The proposed thesis title need not be specified at this time.

The proposed course of study shall be approved by the head of the major department if it was drafted under the guidance of his authorized representative.

If the student chooses, he may suggest an adviser other than the head of the department.

The program of study may be changed or modified at the request of the student and with the approval of the adviser, the college and the University committees.

LIMITATION ON SEMESTRAL WORK

No person who is employed in an engrossing occupation shall be permitted to undertake work, formal or thesis, of more than ten units value in any one semester.

ADMISSION TO CANDIDACY

Regular graduate students, prospective candidates for an advanced degree, shall make formal application for candidacy on a prescribed form not later than five days after the opening of the semester in which the degree may be awarded.

This application shall set forth the proposed title of thesis, and shall include a statement of the formal courses already completed and being taken, the names of the instructors in charge, and grades already obtained. It shall be endorsed by the heads of all departments concerned and by the adviser. It shall be forwarded to the College Committee which shall indorse it to the University Committee for final action.

No candidate for an undergraduate degree shall be accepted as a candidate for a graduate degree.

REQUIREMENT FOR GRADUATION

The Master's degree shall be awarded on fulfillment of the following general requirements:

1. The student shall have been in residence for at least one year after registration.
2. The student shall have completed at least thirty units of approved work in this University. Of these, twenty units shall have been in formal courses. The remaining ten units shall be credited to the research course or other work on which the thesis is based, provided that this work shall have been of a *bona fide* investigative nature carried out under the close

supervision of the head of the major department or of some one formally delegated by him, and shall have involved not less than the equivalent of twelve and one-half to fifteen hours of actual work a week for the entire year. Of the twenty units of formal courses, not less than ten shall have been in a major graduate course. Not more than ten units shall be devoted to minor subjects in not more than two other departments; of these not more than five units may be credited for courses primarily of undergraduate nature (i. e. courses numbered below 100): *Provided*, That for this purpose such courses shall carry but one-half their normal (undergraduate) credit value. The selection of minor subjects shall be such as to insure breadth of training as related to major subject.

No credit toward a Master's degree shall be given for any undergraduate work done previous to registration as a graduate student. Graduate work, however, done at this University previous to registration may be credited to the Master's degree upon the unanimous vote of the University Committee. No credit shall be given for formal courses in which a grade lower than "2" is obtained. No graduate student who is conditioned in a given course may pass off the condition and receive graduate credit for it. No credit shall be given under any circumstances for work that has been credited to any other degree. No credit shall be given toward a graduate degree for work done in any other institution. No credit shall be given for any work done *in absentia* except in the preparation of the thesis, and this only on the formal recommendation of the College Committee and on approval of the University Committee.

3. The student shall have prepared a satisfactory thesis which shall have been submitted in standard form as specified below.

4. Candidates requiring more than one year to complete their work must have fulfilled all requirements adopted in the interval and in force at the time the degree is conferred.

5. Each candidate shall be subject to a general oral examination in addition to the regular course examinations.

Final recommendation for the degree shall depend on the student's general ability as demonstrated by the oral examination, thesis, and the testimony of his instructors more than on his ability to pass formal examinations.

Candidates who fail to pass the oral examination at a second trial shall be permanently debarred.

THESIS

See the various departments for description of Course 300; Master's Thesis.

These may be on subjects involving original investigation or re-investigation of published work, to be approved by the departments in which the major courses are taken, by the advisers and by the Committees on Graduate Studies. Titles of theses shall be submitted for final approval at the time of applying for candidacy.

The first draft of the theses for the Master's degree shall be given to the advisers for necessary correction and editing on or before January 1st. From the adviser, the draft embodying necessary corrections, shall be submitted to the major department for final correction and criticism of the subject matter.

The theses in final form and accompanied by a signed statement from the instructor in charge setting forth the nature of the work done, the manner in which it was carried out, the approximate amount of time devoted to the work by the student, and, the degree of supervision to which it was subjected shall be placed in the hands of the chairman of the corresponding college committee not later than February 15th. The College Committee shall within three days forward all theses to the University Committee, indorsed favorably or otherwise.

The Chairman of the University Committee shall assign theses as received to members of that Committee or to other persons designated by him for criticism of subject matter, manner of presentation, and English used.

The theses shall be returned by the critics to the candidates concerned for correction, if any, in compliance with the critics' suggestions, not later than March 1. In case of disagreement between the critics and the major professor concerning doubtful points, the opinion of the major professor shall prevail, unless a unanimous vote of the members present of the Council Committee shall decide otherwise, a note to that effect to be attached to the theses.

The corrected theses, suitable for publication and ready to be submitted with the comments of the critics and the answers to the comments by the major professors, must be in the hands of the University Committee not later than two days before the date on which the Committee shall decide the case of candidates for graduation.

Theses presented for acceptance shall be considered property of the University, and shall be in standard form for permanent preservation. Four copies shall be submitted to the University Committee, to be distributed as follows: one for the major department, one for the College Library, one for the University Library, one for the chairman of the University Committee.

Theses shall be typewritten on standard high grade, fairly heavy 8 by 10½-inch white paper. The pages shall be well margined, and the writing double-spaced throughout except that direct quotations of more than two lines shall be single-spaced in separate, inset paragraphs. The pages of the body of the thesis shall be numbered consecutively.

Bibliography may appear as footnotes, but it is preferred that it should be assembled on a separate sheet or sheets at the end, the items arranged and numbered consecutively in the order of citation.

The theses shall be permanently bound in khaki, to conform with the standard adopted by the University Committee. The back shall bear a legend to conform with the following example: Thesis: Master: of: Science: Rosario: 1920. If the bound volume is too thin to permit this

arrangement, the inscription shall be printed lengthwise, reading from below upward. The lower 5 centimeters of the back shall be without inscription, for library label.

The title page shall bear only the following inscription properly fulfilled:

(FULL TITLE OF THESIS, IN CAPITALS)

(NAME OF CANDIDATE)

SUBMITTED TO THE GRADUATE STUDIES COMMITTEE

COLLEGE OF

UNIVERSITY OF THE PHILIPPINES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

(NAME OF DEGREE, IN CAPITALS)

(DATE)

On the next sheet shall appear the following certificate: "The thesis attached hereto, entitled (full title), prepared and submitted by (full name), in partial fulfillment of the requirements for the degree of (name of degree), is hereby accepted." Blanks shall be provided for the signature of the adviser and the head of the department in which the work was done. Below this shall appear: "Accepted as partial fulfillment of the requirements for the degree of with provision for the following signature: "Committee on Graduate Studies, College of, Chairman: Below this, similar provisions shall be made for signature of the chairman of the University Council Committee on Graduate Studies.

On a third sheet shall be set forth detailed biographic data, giving full name of the candidate, date and place of birth, institutions in which educated, with dates, and certificates, diplomas, degrees, and honors conferred upon him, studies abroad, and previous publications, special or general. This shall be signed by the candidate.

The first page of the body of the thesis shall be headed with the full title of the thesis followed by a topical index, each item giving the page on which it is to be found. Corresponding topical headings shall appear in the heading of the thesis.

ORAL EXAMINATION

The oral examination shall be conducted by the Graduate Studies Committee of the college in which the major subject is taken, led by the major department. It shall be participated in by instructors of the minor subjects, in whatever colleges these were taken, by the adviser, and by a representative of the University Committee other than the member of the examining committee.

This examination is regarded as an independent test of the candidate's general scholarship, apart from the test involved in the preparation of

an acceptable thesis and apart from the regular course examinations. It shall cover the general field of the candidate's major and it shall follow more or less closely his minor courses.

The examining committee shall make, through the college committee and subject to its approval, a written report of the result of the oral examination.

SCHOLARSHIP AND FAILURES

Any accepted student who shows evidence of serious deficiency in the language requirement shall be dropped or required to discontinue work pending the removal of the deficiency.

Any student showing evidence of serious deficiency in English shall be subject to the same conditions.

Any student who is conditioned or who fails in graduate courses totalling 15 units or more shall be permanently disqualified as a candidate for the degree.

FURTHER OPPORTUNITIES FOR GRADUATE STUDY

For those who are holders of the Masters' degree, there are exceptional opportunities in several departments to do further research work.

Botany.—The herbarium of the Bureau of Science, which is rapidly being increased, now contains over 125,000 mounted specimens, of which approximately two-thirds are Philippine and the remainder extra-Philippine. The material is arranged by families, genera, and species, so that everything on hand is readily accessible for study. This collection, with the accompanying library facilities of the Bureau of Science, forms one of the best centers for taxonomic research outside of Europe and North America.

The extra-Philippine material is for the most part from the Tropics, and in developing this part of the herbarium special attention has been given to securing representative botanical material from the Indo-Malayan region in general; the herbarium contains exceedingly valuable collections of plants from India, southern China, Formosa, Cochin China, the Malay Peninsula and Archipelago, Australia, and Polynesia.

The Philippine collection is the largest and most valuable extant, containing representatives of nearly all the species definitely known to grow in the Archipelago. It is especially rich in types and cotypes. The great bulk of the herbarium is made up of the phanerogamic collection, but the cryptogamic section includes exceedingly extensive collections, for the most part identified, of ferns and fern allies, as well as large collections of named mosses, scalemosses, fungi, lichens, and algæ.

The Bureau of Science is thoroughly equipped for those electing to carry on work in plant physiology and in systematic or economic mycology. The botanical library is very extensive and contains a practically complete collection of books applying to the flora of the Philippines and to the Indo-Malayan region as a whole. The list of general botanical publications is extensive, and the library is rich in sets of periodicals, proceedings of societies, etc.

The College of Agriculture at Los Baños is situated in a remarkably favorable spot for botanical work. The college buildings are at the very foot of Mount Maquiling, and not distant from the shore of Laguna de Bay,

Maquiling rises to a height of about 1,500 meters above the lake, and the trip to the summit and return can readily be made in a day. Within easy reach is the much higher mountain, Banajao. "From the lake to the mossy forest on the summit of Maquiling, every great tropical formation, except the mangrove and the alpine shrub, is present within convenient reach. Aside from the large number of introduced plants on the campus, there is an extraordinarily large local flora; and this vegetation never rests."

Chemistry.—The Department of Chemistry in the College of Liberal Arts offers graduate courses for students desiring to specialize in Chemistry. Facilities for reasearch work are also available for students desiring to complete a dissertation for the Master of Science degree. The laboratory equipment and the library of the Bureau of Science are also available for graduate students. Graduate students desiring to work on chemical research problems will be given every opportunity for their work which is usually published in the Philippine Journal of Science. There are numerous chemical problems which are especially concerned with tropical products. Tropical chemical research offers, therefore, an enticing field for advanced students who desire to broaden their training. Further particulars concerning chemical research will be found in the College of Liberal Arts catalogue.

Zoölogy.—The Zoological laboratory is situated within a few hundred meters of the shore of Manila Bay. The tropical climate and proximity of the sea afford unexcelled opportunity for the advanced zoölogical work. Many places of interest to zoölogists are easily accessible by short steamer journeys. A marine biological station has been instituted by the University at Puerto Galera, Mindoro. Investigators and advanced students who desire to have accommodations and to accompany the field expeditions will be welcomed. The laboratory possesses a fair collection of the representatives of lalcal marine and fresh water fauna and is well equipped with general and special apparatus and chemicals needed for advanced work. The Bureau of Science has large and fairly complete collections of Philippine birds, reptiles, and insects. The library of the Bureau of Science contains nearly all of the principal sets of zoölogical journals and other literature.

History.—The Philippine Library, which includes the Tavera, Retana, Compañía Tabacalera, Zulueta, and Ponce Collections, possesses by far the best collection of Filipiniana in existence; and as the early history of the Philippines was closely connected with the beginning of European interest in the Far East, it is probable that in this field also the library leads. The convents of the religious orders contain records of the first missionary efforts in Asia and the Government archives have many papers

bearing on early political affairs. It is believed that nowhere else will the student find such opportunities in primary sources for studying the beginnings and progress of European and American influence in the Far East, a subject of increasing interest since the modernizing of the Orient.

Anthropology.—The complex racial and linguistic problems afforded by the Philippines and the neighboring oriental countries offer an unusually rich field for original research in anthropology. In addition to unique library facilities, students in this department have the advantage of free access to the collections of the Philippine Museum, the Ateneo de Manila, and the University of Santo Tomas. The ethnological literature in the library of the Bureau of Science, and in certain private collections especially rich in unpublished manuscripts, may also be used by graduate students.

The University Library

The University Library includes all the collections of books, pamphlets, periodicals, manuscripts, and other publications in the possession of the University of the Philippines. It includes the main library, the college, school, and departmental libraries in Manila, Los Baños, Cebu and Vigan, and the collections deposited in the President's office and other administrative offices of the University.

THE MAIN LIBRARY

The main library is now in its new permanent building which forms the central unit connecting the University Hall and Rizal Hall. It faces Padre Faura street.

The main collection consists of about 39,000 volumes, 10,000 pamphlets, 500 manuscripts, 300 maps, charts, blue prints, etc. It also includes 1081 periodical and other serial publications currently received, 580 of which are paid subscriptions, 201 from exchanges and 300 as gifts. The main library also has an art collection of 229 oil paintings, 85 water-color and crayon sketches and 85 pieces of relief, whole-figure and group plaster casts, largely from prize-winning works from the School of Fine Arts.

Most of the books and pamphlets are provided with author, title, subject and other added entries consisting mainly of Library of Congress printed cards and of a small proportion of typewritten cards, arranged in a dictionary catalog contained in standard cabinets located near the right door of the main entrance to the general reading room opposite the delivery desk. The publications are classified and arranged according to the Library of Congress classification system. The unclassified publications are arranged alphabetically by author, and are provided with a card index by main entries.

The main library includes many of the standard general reference works and some of the best writings in the departments of literature, linguistics, pure and applied sciences, social sciences, military science and tactics, and physical education. It has been receiving as gifts and exchanges catalogs, reports, dissertations and other materials from American and European universities and libraries and valuable publications from learned societies, and institutions of foreign countries. For the last seven years, it has been a depository of the United States Government documents on the preferential or selective basis, and of the Philippine Government documents which are not for sale.

COLLEGE AND SCHOOL LIBRARIES

a. In Manila

The libraries of the colleges of Liberal Arts and Education are embodied in the main library collection.

The College of Law maintains its working collection of 9,165 volumes, 1,451 pamphlets, 70 periodicals currently received, and 28 pictures, located in Rooms 115 and 116 on the first floor of the University Hall. This col-

lection is supplemented by the libraries of the Supreme Court, the office of the Attorney-General, and the National Library.

The law collection is mainly for the use of the Faculty and students of the College of Law. Other readers may be permitted to use it by special permission only.

The College of Medicine, including the Schools of Pharmacy and Hygiene and Public Health, has a collection of about 1,000 well selected volumes and 72 subscriptions to periodicals, largely supplemented by the resources of the Library of the Bureau of Science.

One of the large rooms on the first floor of the School of Hygiene and Public Health building has been provided with modern equipment for the nucleus of the school's reference library.

The Business Library on the first floor of the Main Library building, has about 700 well selected volumes and pamphlets, and 37 periodical subscriptions. This library is mainly for the use of students and members of the Faculty of the School of Business Administration, but other readers may be allowed to use it by special permission.

The College of Engineering collection consisting of over 400 volumes and 14 periodical subscriptions is now conveniently located in the Main Engineering building.

The Conservatory of Music has about 3,000 volumes, including scores and sheet music.

The School of Fine Arts has recently inaugurated the acquisition of materials on art. Its small collection of over 200 well selected books, and 14 art magazines is located in the Fine Arts building.

The University High School has its working collection of over 3,000 volumes, 60 pamphlets, and 50 periodicals currently received.

b. In the Provinces

The library of the College of Agriculture, including the Rural High School, at Los Baños has a collection of about 12,000 volumes, over 2,100 pamphlets, 328 manuscripts (theses), and a small number of maps. Its periodical resources consist of 87 paid subscriptions, 247 exchanges, and 209 journals and other serial publications as gifts, mostly on agricultural and scientific subjects. The library is located in the administration building. This collection is classified according to the Library of Congress scheme. Library of Congress printed cards are being used in the catalog.

The College of Veterinary Science, Los Baños, has about 2,000 volumes, 2,000 pamphlets, and 30 periodical subscriptions. The School of Forestry, also has a small collection of books and pamphlets supplemented by deposits from the Bureau of Forestry.

For research work, members of the faculties and the advanced students in the Colleges of Agriculture and Veterinary Science and in the School of Forestry, also receive the aid of the library of the Bureau of Science in Manila. Large numbers of publications are sent from this library to Los Baños. Much reference work is also carried on in the reading room of the Bureau of Science Library.

The Junior College at Cebu has a collection of about 3,000 books, 154 pamphlets, and 59 periodicals, supplemented by the provincial branch of the National Library and by deposit collection sent annually from the central library of the University.

The Northern Luzon Junior College in Vigan has over 1,000 books and pamphlets, and 57 current periodicals.

USE OF THE LIBRARY

The use of the University Library, including all its branches, is governed by sections 18 to 35, and 41 to 52 of the general Library Rules and Regulations, approved by the University Library Board on March 24, 1927, and ratified by the Board of Regents on August 30, 1928. As Rule 52 provides that "No violation of the rules and regulations of the libraries will be excused on the plea of ignorance," the readers are earnestly advised to familiarize themselves with those provisions which govern the particular libraries they desire to use. Copies of the Rules and Regulations may be borrowed at the Reference Desk, or read in the Library bulletin boards.

ADDITIONAL NOTICE TO STUDENTS

Every student of the University of the Philippines must register for library privileges at the Main Library or at the libraries of colleges or schools having special collections for their exclusive use.

Library privileges are issued during the regular registration periods of the University, in the form of personal registration and identification cards valid for such lengths of time for which the usual library fees are duly paid on official receipts.

The registration card bears the following pledge, duly signed by the person to whom the library privileges are issued:

"I hereby apply for a library card and agree to comply with all library rules and regulations, to take good care of all books drawn by me, to pay promptly all fines or damages charged to me, and to give prompt notice of change in my address."

The personal identification card bears the following important notice:

"IMPORTANT

"The owner of this card is entitled to the use of the Library of the University of the Philippines (subject to its rules) and is responsible for all books issued on the number and name appearing on the face of this card.

"This card must be presented at the Loan Desk each time a book is borrowed.

"LENDING this CARD or the BOOK borrowed on it is strictly PROHIBITED."

Students who lend their personal identification cards or the books borrowed on them, forfeit their own library privileges. Students who use personal identification cards of others or who borrow books on those cards are subject to disciplinary action by the University authorities leading

to suspension or expulsion from the University, for the offense of misrepresentation or falsification of public records and forgery of signatures.

The Main Library is open each week day (except Sundays and official holidays) from 7:30 a. m. to 9:30 p. m. during the regular sessions of the University; and from 8 to 12 a. m. and from 1 to 4 p. m. during the Christmas and long vacations when the Summer School is not in session. The other libraries have hours of opening arranged in accordance with the needs of their readers.

The reading room is for quiet study and those using it are requested to refrain from all unnecessary conversation and from studying with each other. Persons wishing to converse or to discuss any subject are asked to step outside in order that those who stay in the library may not be distracted from quiet study and reference work.

The reading room must not be made a lounging place or a social parlor. Each reader is enjoined to cooperate in making the reading room look neat and orderly.

All students are asked to register all books or other publications at the charging desk before borrowing them from the library.

No book belonging to the libraries of the University may be used by students as a manual or textbook in the classroom. Dictionaries and other sources of brief information are not for continuous use by a single student.

Transcribers are not allowed to lay the paper on which they write upon any part of the books from which they are copying. The utmost caution against soiling or disfiguring books and other library materials is enjoined. Persons observing any accidental defect in a library book or other publications are requested to report it immediately to the librarian or assistant in charge.

THE NATIONAL LIBRARY

The National Library, on the ground floor of the Legislative Building, is the largest library in the Philippine Islands. It contains some of the best modern works on social science, and is admitted to possess the best collection of Filipiniana in existence. By arrangement with the authorities of the National Library, a large number of books from its shelves are borrowed by the University Librarian. The reading rooms and the privilege of borrowing books from the National Library are also open to University students. The following regulations must be observed:

1. The student shall present a statement signed by the Registrar of the University to the effect that he is a regularly enrolled student of the University and is in good standing.

2. The student shall agree in writing to obey the rules and regulations of the library and to be personally responsible for any loss that the library may sustain through him.

3. The University of the Philippines will require its students to observe strictly all the rules and regulations of the National Library.

This privilege will be withdrawn from any student who fails to obey the rules and observe the regulations of the library.

THE BUREAU OF SCIENCE LIBRARY

The resources of the library of the Bureau of Science have always been freely offered to scientific workers in the University of the Philippines. The reading room of this library is open to all readers from 8 a. m. to 5 p. m., Monday to Friday; 8 a. m. to 4 p. m., Saturdays; and 9 a. m. to 12 noon, Sundays and holidays. The members of the University faculties are given the same privileges as the staff of the Bureau of Science, while students can usually arrange to borrow books urgently needed for home study for limited periods.

This library contains most of the standard dictionaries and encyclopedias in English and Spanish, together with a number of similar works in other languages; complete sets of the leading periodical indexes; series of Who's Who, Who's Who in America, Wer Ist's, and other yearbooks, covering a period of years; a set of Blair and Robertson's Philippine Islands; and, in addition, many bibliographies and abstract journals. The library receives regularly, through subscription and exchanges, more than one thousand periodicals, most of which are bound and added to the already unusually valuable collection of scientific periodical literature.

Summer School

OFFICERS OF ADMINISTRATION

RAFAEL PALMA, LL.B., LL.D., President of the University of the Philippines.

LEANDRO H. FERNANDEZ, A.M., Ph.D., Director.

HISTORY

The advisability of holding classes during the long vacation to accommodate students who desire to continue their studies during the summer months was felt as early as 1913. As a first step, the Board of Regents, in February, 1914, empowered the President to make provisions for such classes as could be given in the summer without extra expense to the University, and thereafter the College of Liberal Arts offered summer classes in Manila. In 1920, and in the years that followed summer classes were also given in Baguio under the auspices of the College of Education. Seeing the urgent needs, however, for the creation of a distinct organization, the Board of Regents, on July 30, 1924, approved the establishment of a Summer School as a separate entity, independent of any department or college. It is controlled by a Director, who is assisted in the performance of his duties by three associate directors and a secretary.

PURPOSE

The primary purpose of the Summer School is to give teachers, employees, and students an opportunity for study and improvement. It aims to serve those who have little or no chance to study during the regular academic period; those who desire to save time in the completion of their courses or to lighten their regular work; and those who desire to study certain subjects which they have not been able to take or in which they have failed during the regular terms.

SESSIONS

Classes will be held in Manila, Baguio, Cebu, and Puerto Galera. In Manila, Baguio, and Cebu, the session lasts for six weeks approximately. Three-unit courses meeting three hours a week during the regular semester will meet one and one-half hours a day, six times a week. Four-unit laboratory courses will meet five hours daily, except Saturdays, two hours lecture and three hours laboratory. Five-unit courses will meet four and one-half hours daily, one and one-half hours lecture and three hours

laboratory. In Puerto Galera the session continues for five weeks approximately. Two hours every day are devoted to lectures and the rest to laboratory and field work.

CREDITS

The work given in the Summer School is the same in kind and amount for every subject as that given in the regular semesters. The completion of any subject in the Summer School gives the student full credit in that subject and such credits count toward a degree. Ordinarily, no student will be allowed to take more than six units of non-laboratory work or five units of laboratory work.

ENTRANCE REQUIREMENTS

The entrance requirements are the same as the requirements for admission to the College of Liberal Arts. See page 24. In case a student desires later on to register in another college of the University, he must fulfill the requirements for admission to that college.

Persons over twenty years of age, although not fulfilling these entrance requirements, may be admitted as special students provided they secure the recommendation of the professor whose work they wish to take. They must also give evidence that they possess the ability and experience to pursue profitably their chosen subjects. Credits earned by special students will not be counted towards a degree.

FEES

A tuition of ₱2.50 per unit of credit will be charged. Students taking laboratory courses, however, will pay the usual laboratory fee, and a deposit of ₱15 if they are new students. Students enrolling in Manila and Cebu will pay a library fee of ₱2.50 and an athletic fee of ₱1.50.

DIRECTOR'S OFFICE

The Office of the Director of the Summer School is located in Room 107, University Hall, Padre Faura, Manila. Address all communications to the Director, Summer School, University of the Philippines.

Department of Military Science and Tactics

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Commandant: Captain FIDEL V. SEGUNDO, (PS) Field Artillery, United States Army.

Executive Officer, Assistant Commandant, Ordnance & Supply Officer:
First Lieut. EUSTAQUIO S. BACLIG, (PS) Cavalry, United States Army.

Assistant Commandant at the Northern Luzon Junior College Branch,
Vigan: Captain SALVADOR F. REYES, (PS) Field Artillery, United States Army.

Assistant Commandant at the Junior College Branch, Cebu: First Lieut.
PASTOR MARTELINO, (PS) CAC, United States Army.

Assistant Commandant at the Los Baños Branch: First Lieut. JOSE E.
OLIVARES, (PS) CAC. United States Army.

STAFF

Captain FIDEL V. SEGUNDO, (PS) Field Artillery, United States Army,
Professor and Head of the Department of Military Science and Tactics.

ASSISTANT PROFESSORS AND TACTICAL OFFICERS

Captain SALVADOR F. REYES, (PS) Field Artillery, United States Army.

First Lieut. EUSTAQUIO S. BACLIG, (PS) Cavalry, United States Army.

First Lieut. PASTOR MARTELINO, (PS) Coast Artillery, United States Army.

First Lieut. JUAN S. MORAN, (PS) Cavalry, United States Army.

First Lieut. ALEJANDRO D. GARCIA, (PS) Field Artillery, United States Army.

First Lieut. JOSE E. OLIVARES, (PS) Coast Artillery, United States Army.

ASSISTANT INSTRUCTORS

Sergeant Julio Barriga, Hdqrs. Battery, 24th F.A. (PS), United States Army.

Sergeant Benito Nones, Co. K, 45th Infantry (PS), United States Army.

Sergeant Andres M. Cabrido, Battery C, 24th Field Artillery (PS), United States Army.

Corporal Leonardo Dumlaog, Hq. Battery, 91st Coast Artillery (PS), United States Army.

Corporal Nemisio Oban, Co. L, 45th Infantry (PS), United States Army.

Corporal Ambrosio Ramil, Co. G 57th Infantry (PS), United States Army.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

HISTORY

Military drill has been a required subject in all of the colleges of the University of the Philippines since 1912. In order to raise the standard of the training, the Board of Regents on November 9, 1921, requested the Governor-General to ask the War Department for the services of an officer qualified as professor of Military Science and Tactics. The request was complied with and on March 17, 1922, the officer reported to the Board of Regents which on the same date authorized the establishment of a department of military science and tactics and approved of the plan of instruction and training. Subsequently the War Department authorized the issue of arms and equipment for the military unit. The course opened July 3, 1922. (Thereafter the term "military drill" has been superseded by the term "military science".)

OBJECTS

The Department of Military Science and Tactics has three principal purposes:

1. To develop physically sound, patriotic, upright, and disciplined citizens.
2. To create a corps of trained officers for the Reserve.
3. To take the lead in fostering University spirit.

ENROLLMENT AND REQUIREMENTS

Military Science and Tactics is a required subject in the curricula of all colleges and schools of the University. The Basic course which covers a period of two years of instruction and training must be successfully completed. The successful completion of this course is a prerequisite for graduation, and must be accomplished during the first two years of residence in the University, or in case of failure, during the subsequent years immediately following such failure.

In case a student after two years of his college work fails or is conditioned in Military Science for one semester or more, said student shall not be permitted to enroll in the third year of his academic course without taking military science unless exempted therefrom by competent authority.

The University Council Committee on Military Science and Tactics shall have power, in extraordinary circumstances, to grant students delay in Military Science and Tactics, allowing them to finish their work in subsequent years.

The two year requirement does not apply to students of the Conservatory of Music and the School of Fine Arts. Students of the School of Surveying and the School of Pharmacy are required to complete only one year of military science instead of two years.

THE ADVANCED COURSE

The Advanced Course is elective for students who successfully complete the Basic Course. Enrollment in the Advanced Course is for two years.

FEES AND EXPENSES

The cost of the uniform, cap, and insignia amounts to approximately ₱20. All textbooks are furnished by the Department. In case a book is lost or is destroyed not through fair wear and tear it must be replaced by the responsible student.

A fee of one peso yearly is collected for membership in the cadet fraternity.

EXEMPTION

Applications for exemption must be submitted to the chairman of the University Council Committee on Military Science and Tactics not later than two weeks from day of registration or employment. Claims for exemption must be supported by documentary evidence.

Exemptions will be granted and approved any time when due to illness or physical disability. In such cases, a certified statement by the University Physician should accompany the request before it is forwarded for action by the department head.

Any student exempted from Military Science shall be required to take, in lieu of this exemption, a corresponding number of units of work to be taken in some academic department approved by the Adviser and the Dean; provided that in the evaluation of the equivalent of military science, each semester's work in this subject shall correspond to 1½ units of academic work; and provided further that no subject or subjects taken prior to the granting of exemption by the authorities concerned shall be allowed as substitution for military science. (University Council resolution, November 5, 1927.)

Athletes representing any University team will be exempted from military Science, provided that they are properly recommended and certified to by the Physical Director. Those who are candidates for this team but are later rejected are given leave of absence during the training period but must report to this department for duty immediately after rejection. Athletes so exempted do not have to take an academic subject in lieu of this exemption.

There is no exemption on account of employment. Employed students drill on Saturday afternoons.

ABSENCES

Absences from military science will be acted upon for approval or disapproval by the department head. Excused absences may be made up during the semester in which they occurred by actual attendance, making up every hour lost. Unexcused absences will be governed by the demerit system. Absences due to sickness will be certified to by the University Physician before approval by the department head.

CEREMONIES

One of the phases of military science given in the University is the participation of the cadet corps in national celebrations. These fall on July 4th—Independence Day, August 13th—Occupation Day, October 30th—Philippine Flag-Restoration Day, November 11th—Armistice Day, November 30th—Bonifacio Day, December 30th—Rizal Day, February 22nd—Washington's Birthday, October 10th—Loyalty Day (Los Baños only).

In addition to the foregoing parades, the cadets will have parades and reviews in connection with their own organization such as the annual inspection, inspection by the Governor-General, and ceremonies for awarding commissions, medals, and prizes. The cadet corps may also be called to participate in the Army and Navy parade during the Carnival Season.

The President has power to call the cadets to participate in four parades and reviews during the academic year at any time he so desires, even if the students are on intersemester or Christmas vacation. In the latter case, however, no such call will be made between December 23rd and 28th both days inclusive.

Unless due to physical condition of cadets or to sickness, absences from the above-mentioned special parades will count five demerits.

GRADUATION IN MILITARY SCIENCE AND TACTICS

A certificate of graduation will be granted to those cadets who satisfactorily complete the basic and advanced courses in Military Science and Tactics.

DISCIPLINE

DEMERIT SYSTEM

The following system of reward and punishment is enforced in the interest of efficiency and discipline.

1. *Delinquencies—Demerits:*

- (a) Demerits are classified as removable and nonremovable. Nonremovable demerits are those incurred for unexcused absences. Removable demerits shall include excused absences and all demerits awarded for delinquencies.
- (b) Cadets will be reported for all delinquencies committed at all drills, formations and assemblies of a military or semi-military nature under the jurisdiction of this department, and demerits in a graduated scale shall be awarded.
- (c) Officers and noncommissioned officers of the Regular Army, cadet graduate assistants, cadet officers and noncommissioned officers will report all delinquencies observed and file such reports in a box labeled "Demerits" located in General Luna Hall, except that the reports of cadet noncommissioned officers shall be incorporated in the reports of their respective company commanders.

- (d) Absences from participation in national celebrations shall be punished by 10 demerits which could be made up hour for hour in case the absence is excused.

2. *Reward—Credits:*

- (a) Attendance at the participation of the Cadet Corps in National celebrations will be rewarded with 5 credits, which may be applied against excess demerits not made up at the end of the semester.
- (b) For each excess removable demerit awarded at the end of the month, one credit will be awarded provided the cadet makes it up by drilling one hour the following month.

3. *Demerit allowance:*

- (a) New cadets will be allowed six removable demerits a month.
- (b) Old cadets, four removable demerits a month.

4. *System of make-up:*

- (a) On the 25th day of every month an inventory of removable demerits will be taken, and a list showing excess removable demerits will be published. In this inventory all excused absences shall be considered as excess demerits and must be made up hour per hour of absence.
- (b) Every excess removable demerit may be removed at the rate of one drill hour per demerit; provided that such excess demerit is made up during the month immediately following. If such excess demerit is not removed during the month immediately following, it will be carried over to the following months at the rate of one demerit each multiplied by a factor equal to the number of months following that month in which the excess demerit was incurred, thus—

1 excess demerit incurred in July = 1 hour drill in August.

1 excess demerit incurred in July = 2 hours drill in September.

1 excess demerit incurred in July = 3 hours drill in October.

- (c) Deficiencies will be made up on Saturday afternoons. Employed student may make up on regular drill days.

5. A list will be posted on the bulletin boards on the first day of every month showing delinquent cadets and the number of hours they have to make up.

6. *Grades:*

- (a) Basis of unexcused absences: The following system of grades at the end of each semester based on unexcused absences will govern:

	<i>Grade</i>
Not more than 2 unexcused absences	1
Not more than 4 unexcused absences	2
Not more than 6 unexcused absences	3
Not more than 8 unexcused absences	4
9 or over	5

These grades will be final, provided that the cadet has removed all removable demerits.

(b) Basis of removable demerits:

- (1) If after awarding a grade as per (a) above, a cadet has removable demerits not removed, his final grade will be that awarded in (a) above, diminished by a number of points equal to the number of demerits not removed at the rate of one point each.

7. Offenses of a serious nature will be referred for punishment to the Executive Committee pursuant to existing rules of the University.

DEPARTMENT OF MILITARY SCIENCE & TACTICS

THE FOUR-YEAR CURRICULUM IN MILITARY SCIENCE AND TACTICS

INFANTRY BRANCH

BASIC COURSE

<i>First Year</i>	<i>Hours.</i>	<i>Units.</i>
1. Enrollment and Registration	1	
2. Rules and Regulations of the Dept.	1	
3. Military training Courtesy & Discipline	1	
4. Citizenship	1	
5. Military Hygiene & Sanitation	1	
6. The Rifle, Nomenclature, Operation & Care	3	
7. Drill without arms	5	
8. Rifle Calisthenics	5	
9. Drill, Soldier, Squad, Plat. & Co.	40	
10. Drill, Battalion	10	
11. Ceremonies, Inspections	20	
12. Marksmanship (Theoretical)	10	
	<hr/>	
	98	3

Second Year

1. Enrollment and Registration	1
2. Weapons in General	1
3. Automatic Weapons—The Machine Gun & Automatic Rifle	5
4. Mobilization	2
5. Combat principles of M.G.Co.	5
6. Chemical Gas Warfare	3
7. Musketry	5
8. Scouting and Patrolling	5
9. Drill—Machine Gun	15
10. Drill, Extended Order	10
11. Wall Scaling	3
12. Drill, Company, Battalion	13
13. Ceremonies, Inspections	20
14. Marksmanship (Range practice)	10
	<hr/>
	98

ADVANCED COURSE

<i>First Year</i>		Hours.	Units.
1. Instruction dismounted w/o arms	1	..... 15	
2. Instruction dismounted w/rifle	2		
3. U. S. Rifle Cal. 30	2		
4. Dismounted Ceremonies	2		
5. Drill, General Introducton	2		
6. Drill, the Rifle Squad, Plat. & Co.	6		
7. Camp Sanitation		1	
8. March Discipline		1	
9. Interior Guard Duty		4	
10. Marksmanship (Duties of instructors & coaches)...		6	
11. Manual of Saber		3	
12. Musketry		6	
13. Scouting and Patrolling dismted.		8	
14. Extended Order Drill		5	
15. Minor Tactics to include the Company and the Machine Gun Co.		18	
16. Command & Instruction of basic course (practical)..		98	
		165	5

Second Year

1. Map Reading and Sketching	11
2. Field Engineering	11
3. Chemical Warfare	5
4. Military History	10
5. Drill, Infantry Battallion	2
6. Military Correspondence	3
7. Minor Tactics to include the Regiment	20
8. Combat Orders	5
9. Command & Instruction of basic course (practical) ..	98

165

5

FIELD ARTILLERY BRANCH

BASIC COURSE

First Year

1. Enrollment and Registration	1
2. Rules & Regulations of the Dept.	1
3. Military Training, Courtesy & Discipline	1
4. Citizenship	1
5. Military Hygiene & Sanitation	1
6. Disciplinary Drill, Soldier, Squad, Platoon, & Battery	20
7. 75 mm. Gun Materiel	9
8. The Firing Battery	32
9. The Service of the Piece 75 mm. Gun	32

98

3

GENERAL INFORMATION

	<i>Second Year</i>	<i>Hours</i>	<i>Units</i>
1. Enrollment and Registration		1	
2. Battery Instruments		30	
3. Telephone & Switchboard		27	
4. The Firing Battery...}	Drill as Non-Coms.	40	
5. The Service of the Piece}			
		<hr/> 98	<hr/> 3

ADVANCED COURSE

	<i>First Year</i>		
1. Signal Communication for all arms		10	
2. Reconnaissance & Occupation of Position		7	
3. Field Artillery Firing		35	
4. Topography & Orientation		15	
5. Command & Instruction of Basic Course (Practical)		98	
		<hr/> 165	<hr/> 3

	<i>Second Year</i>		
1. Field Artillery Firing		32	
2. F. A. Organization		8	
3. Tactical Employment of F.A.		6	
4. Field Artillery Liason		8	
5. Military History		10	
6. Military Correspondence		3	
7. Command & Instruction of Basic Course		98	
		<hr/> 165	<hr/> 3

Department of Physical Education

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA

Acting Physical Director, Department of Physical Education: Prof. CANDIDO C. BARTOLOMÉ

FACULTY OF INSTRUCTION

Prof. CANDIDO C. BARTOLOMÉ, M.A., M.P.E.

Acting Physical Director, Department of Physical Education

Mr. RAMON P. TOLENTINO, JR., B.S.A., B.S.E.

Assistant Physical Director

Miss FRANCISCA REYES, M.A.

Assistant Physical Directress

Mr. NICOLAS S. MACHAN, B.L.L.

Instructor in Physical Education (Los Baños)

Miss CARMEN HIZON, B.S.E.

Instructor in Physical Education

Mr. SALUSTIANO VIOLANDA

Instructor in Physical Education (Jr. College Cebu)

Mr. FELIPE LAGUATAN, B.P.E.

Instructor in Physical Education (Jr. College Vigan)

Mr. JANUARIO ANGELES, B.S.M.E.

Instructor in Physical Education

Mr. JOHN SCHLOBOHM, B.S.M.E.

Assistant in Physical Education

Mr. FORTUNATO C. ROQUE

Assistant in Physical Education

COACHES

Mr. JUAN K. TADURAN

Mr. FORTUNATO P. CATALON

Mr. JOSE R. ENCARNACION

DEPARTMENT OF PHYSICAL EDUCATION

PURPOSES

1. To look after the health of the students and to teach good health habits.
2. To encourage the appropriate physical development and greatest efficiency of each student.
3. To promote the recreative, social and ethical values derived from various sports.
4. To provide activities which are scientifically sound and satisfactory to the individual.
5. To place students in activities in keeping with their physical condition.
6. To provide a program of intramural and Varsity athletics to encourage greater number of students to participate in teams as well as in recreational games.
7. To provide restricted exercises for those with health handicaps.
8. To offer courses to students who want to major in physical education.
9. To provide facilities and training for students who have selected physical education as their life work.

EQUIPMENTS AND FACILITIES

IN MANILA

The Department of Physical Education has two gymnasiums: one for boys and one for girls. They have a combined floor space of about 9,000 square feet. The two gymnasiums are provided with regulation size basketball courts. Adjoining the Department's office is a locker room containing 342 individual lockers for boys. Under the grandstand of the swimming pool is the Varsity locker room. Adjoining the women's gymnasium is the women's locker room. This contains individual lockers, shower rooms, and partitions for individual dressing. It also contains a mechanical horse for the use of defective students.

The University has two swimming pools. The bigger has a dimension of 25 meters by 10 meters and its deepest portion is 9 feet; the shallowest part is 4 feet. The small swimming pool is 17 meters by 7 meters and has a uniform depth of 4 feet. Adjoining the swimming pools is the filtration plant which filters and chlorinate automatically the water in both pools. In the past six months the daily count of both pools has never gone over twenty with negative B. coli.

The University has just acquired a new athletic field with an area of a little over four hectares. It is planned to have this field developed in ten years. It will contain the following:

1. A baseball diamond
2. An oval for a 400 meter course with a 120 meters straight away

3. A football field
4. A basketball court
5. Tennis courts
6. A gymnasium
7. A swimming pool
8. A filtration plant
9. A horse shoe stadium

At present the University has a football field, volleyball courts, indoor baseball diamond, basketball court, tennis courts, handball courts, and a private exercise room for men.

In view of the present congestion on the University Campus the Varsity team has been given the privilege by the P. A. A. F. to practice at Wallace Field and at Harrison Park. To facilitate matters the U. P. A. A. has constructed a dressing room for the use of the University athletes in the latter field.

IN LOS BAÑOS

The Los Baños Colleges has the following equipments for the physical development of the students:

1. A baseball diamond.
2. A soccer field
3. A 400 meters oval
4. Two clay tennis courts
5. Four volleyball courts
6. Four basketball courts.

A concrete gymnasium is under construction. When finished the floor will contain a maximum size basketball court.

IN CEBU

The Junior College in Cebu has a gymnasium of about 5,000 square feet. A running track, a baseball diamond, a soccer field, and basketball and volleyball courts are under construction.

IN VIGAN

The Junior College in Vigan has a gymnasium and an outdoor play field.

REQUIREMENTS

1. All students must submit to medical and physical examinations prior to registration in the University. The Director may require any student to have a medical or physical examination or both from time to time.

2. All students are required to take physical education during their first three years in the University with the exception of Pharmacy students who are required to take it in the freshman year only. Any student who wilfully refuses to report for physical education shall be subject to disciplinary action.

3. During their freshman year the students are to take two hours a week of physical education; one hour lecture in personal and community hygiene and the other hour, practical. The sophomores and juniors will take one hour a week of practical work.

4. Students who are physically able will take the following:

a. Male students:

Freshman	Physical Education 1 and 2
Sophomore	Physical Education 3
Junior	Physical Education 4

b. Female students

Freshman	Physical Education 11 and 12
Sophomore	Physical Education 13
Junior	Physical Education 14

DESCRIPTION OF THE ABOVE REQUIRED COURSES

Physical Education 1 (Hygiene) ..	Personal and community Hygiene
Physical Education 2.....	Progressive mass Free-hand gymnastics
Physical Education 3.....	Progressive mass light apparatus
Physical Education 4.....	Progressive heavy apparatus
Physical Education 11.....	Hygiene
Physical Education 12.....	Elementary gymnastics
Physical Education 13.....	Progressive mass gymnastics (free-hand and light apparatus)
Physical Education 14.....	Advanced gymnastics.

SWIMMING REQUIREMENTS

5. All students, except for good reasons, are required to pass the University swimming requirements.

[NOTE.—75 points are required to get a passing grade]

FIRST YEAR	Points
1. Side stroke—(10 meters)	5
2. Single overarm—(10 meters)	5
3. Tread water—1 minute	5
4. Floating on back—1 minute	5
5. 25 meters back stroke—35 seconds	15
6. Dive in and swim 50 meters (Back stroke half of distance and side stroke other half)	15
7. Swim arm only—10 meters	10

SWIMMING REQUIREMENTS

77

8. Swim legs only—10 meters	10
9. Running plain dive—spring board	10
10. Head carry—10 meters	20
	<hr/>
	100

SECOND YEAR

1. Double over arm or crawl-form—25 meters.....	5
2. Swim 100 meters demonstrating:	
Back stroke	} 10
Breast stroke	
Speed stroke (crawl or trudgeon)	
3. 50 meters swim free style in 51 seconds.....	10
4. Break front strangle hold-deep water.....	15
5. Break back strangle hold	15
6. Surface dive in deep water to retrieve object.....	5
7. Back dive	10
8. Plunge for distance 10 meters.....	10
9. Hair carry—10 meters	20
	<hr/>
	100

THIRD YEAR

1. Crawl and double over arm 25 meters	5
2. Breast stroke—10 meters	5
3. Tread water 3 minutes	5
4. 100 meters swim free style—1 minute and 46 seconds	10
5. 200 meters swim free style n otime limit.....	10
6. Tired swimmer carry—25 meters preceded by a 20 meter swim	20
7. Break wrist hold deep water	15
8. Swan dive	10
9. Single arm lock carry 25 meters	20
	<hr/>
	100

FOURTH YEAR

1. Trudge on crawl	5
2. Back crawl—10 meters	5
3. 50 meters swim—back crawl—77 seconds.....	10
4. 400 meters swim—no time limit.....	10
5. Surface dive in 8 feet of water and bring up an object	10
6. Shafer method of resuscitation—3 minutes.....	10
7. Front jack knife dive	10
8. Back jack knife dive	10
9. Back flip	15
10. Breast stroke carry 25 meters	15
	<hr/>
	100

MAKEUPS

1. Two cuts a semester are allowed.
2. Unexcused absence in excess of the allowed cuts cannot be made up. Excused absence in excess of the allowed cuts may be made up, hour for hour, within a week after the absence has been made, except for some especial reasons.

CREDIT

3. Semestral deficiencies due to failure may be made up in the senior year. Students taking preparatory Medicine or preparatory Law may make up their deficiencies in their sophomore year in these colleges.
4. A student receiving a grade of "4" must do creditable work the following semester and have a good attendance record in order to remove it; otherwise it automatically becomes "5".

ATTENDANCE

1. Students must hand in to the Department of Physical Education their class cards on or before the first day of their classes. Class cards will not be accepted after the second week, except in case of late enrollment in the University. Absences which are due to late registration in a class will be deducted from the students' absence allowance.
2. Students having conflicts may transfer from one section to another within two weeks after the opening of the classes.
3. Students unable for minor physical reasons to participate in regular activities, should report for corrective or remedial exercises. All illness requiring absence from college should be reported to the University physician and to the Department of Physical Education within three days after the absence; otherwise, the certificate will be considered in valid.
4. Any student who absents himself from an appointed examination without sufficient cause shall be given a grade of "5".

EXEMPTIONS

1. Defective students are exempted from physical exercises, but they are required to enroll for any of the theoretical courses offered by the Department of Physical Education.
2. All applications for exemption must be certified by the University Physician only and approved by the Director of Physical Education.

GRADING

1. The final grades will be based upon:
 - a. attendance
 - b. posture
 - c. attention and spirit
 - d. improvement
 - e. achievements
2. In the record of absences two unexcused tardy marks shall be considered equivalent to one unexcused absence.

CREDIT

1. Students satisfying the requirements in physical education will be given four units credit in the freshmen year and four units in the sophomore and junior years.

2. Eight units of credit in physical education are required of every student before they can complete the requirements, except those who are exempted for valid reasons.

3. Credit will be given for participation in the Varsity, intramural activities and gymnastic teams.

UNIFORMS

Gymnasium:

Men	maroon shirt, white running pants and white, heeless tennis shoes.
Women	white middy blouse with white collar (not silk)
	black sateen bloomers
	white, heeless rubber shoes
	white stockings
	tie—black

Swimming pool:

Men	swimming trunk (navy blue or black in color)
Women	one piece bathing suit with skirt; bathing cap

COURSES IN PHYSICAL EDUCATION

	Hours	Units	Semester
Theoretical Courses			
P. E. 51 (History of Physical Education)	3	3	2nd
P. E. 52 (Applied Anatomy and Kinesiology)	3	3	1st
P. E. 53 (Physiology)	3	3	1st
P. E. 54 (Physiology of Exercise)	3	3	1st
P. E. 55 (Anthropometry; the same as Anthro. 108)	3	3	2nd
P. E. 56 (Play and Playgrounds)	3	3	2nd
P. E. 57 (Administration and Supervision in Physical Education)	3	3	2nd

THEORETICAL AND PRACTICAL COURSES

P. E. 58 (Pedagogy, Nomenclature and Practice in Free Hand Exercises)	3	2	1st
P. E. 59 (Pedagogy, Nomenclature and Practice in Light and Heavy Apparatus)	3	2	2nd
P. E. 60 (Conduct and Practice in Group Games, including Girl's Basketball, Volleyball and Indoorbaseball)	3	2	1st
P. E. 61 (Aesthetic, National and Folk Dancing)	3	2	2nd
P. E. 62 (Baseball Coaching-Theory, Demonstration and Practice)	3	2	2nd
P. E. 63 (Track and Field Coaching-Theory, Demonstration and Practice)	3	2	2nd
P. E. 64 (Basketball Coaching-Theory, Demonstration and Practice)	3	2	1st
P. E. 65 (Swimming-Theory, Demonstration and Practice)	3	2	1st
P. E. 66 Tennis Coaching-Theory, Demonstration and Practice)	3	2	2nd
P. E. 67 (Soccer Coaching-Theory Demonstration and Practice)	3	2	1st
P. E. 68 (Research) .....	....	3	2nd
(Hours to be arranged)			.. a
P. E. 69 (Boxing and Wrestling Demonstration and Practice)	3	2	2nd
P. E. 70 (Fencing-Demonstration and Practice)	3	2	1st

MAJOR COURSES IN PHYSICAL EDUCATION

- P. E. 51 (*HISTORY OF PHYSICAL EDUCATION*q.—A survey of the growth and development of physical education in Europe and the United States. Special emphasis will be given in regards to the growth of physical education in the East.

3 hours a week; 2nd semester; credit 3 units.

- P. E. 52 (*APPLIED ANATOMY AND KINESIOLOGY*).—This course aims to familiarize students in physical education with the principal types of muscular exercises with inquiry as to their aims and purposes. It embraces analysis of simple and complex movements; noting carefully what bones, muscles and joints are involved. This course is being given by the Department of Anatomy, College of Medicine.

3 hours a week; 1st semester; credit 3 units.

- P. E. 53 (*PHYSIOLOGY*).—Students who intend to become teachers in physical education should know something of the human body; its nervous system, blood circulation, respiration, digestion, metabolism, excretion and different senses. This course is being given by the Department of Physiology, College of Medicine.

3 hours a week; 1st semester; credit 3 units.

- P. E. 54 (*PHYSIOLOGY OF EXERCISE*).—Exercises in order to be beneficially effective should be well selected, regulated and properly applied. This course treats of the various forms of exercises and their effects on the various parts and organs of the body.

3 hours a week; 1st semester; credit 3 units.

- P. E. 55 (*ANTHROPOMETRY: THE SAME AS ANTHROPOLOGY 108*).—This course is being given by the Department of Anthropology, College of Liberal Arts.

3 hours a week; 2nd semester; credit 3 units.

- P. E. 56 (*PLAY AND PLAYGROUNDS*).—This is intended to give the students the aims and values of play activities. This also concerns with the study of the growth of playgrounds in different countries.

3 hours a week; 2nd semester; credit 3 units.

- P. E. 57 (*ADMINISTRATION AND SUPERVISION IN PHYSICAL EDUCATION*).—This course embraces a detailed study of the administration and supervision of physical education problems.

3 hours a week; 2nd semester; credit 3 units.

- P. E. 58 (*PEDAGOGY, NOMENCLATURE AND PRACTICE IN FREE HAND EXERCISES*).—This course covers the different methods of conducting physical education classes, especially formal exercises. It also aims to set a standard form of nomenclature among the teachers in physical education in the Philippines. Students will be given opportunities to execute what they have learned and also to lead classes.

3 hours a week; 1st semester; credit 2 units.

- P. E. 59 (*PEDAGOGY, NOMENCLATURE AND PRACTICE IN LIGHT AND HEAVY APPARATUS*).—The aims and purposes of this course in the same as P. E. 53.

3 hours a week; 2nd semester; credit 2 units.

- P. E. 60 (*CONDUCT AND PRACTICE IN GROUP GAMES, INCLUDING GIRL'S BASKETBALL, VOLLEYBALL AND INDOOR BASEBALL*).—This course aims to give the students information necessary for the conduct and practice of group games suited to particular conditions. Special emphasis will be given to learning the fundamentals and rules in girl's basketball, volleyball and indoor baseball.

3 hours a week; 1st semester; credit 2 units.

- P. E. 61 (*ÆSHETIC, NATIONAL AND FOLK DANCING*).—This course aims to give the students all the fundamentals in dancing. Different æsthetic dances as well as some national dances of other countries will be taught. Special emphasis will be given to Philippine native dances.

3 hours a week; 2nd semester; credit 2 units.

- P. E. 62 (*BASEBALL COACHING-THEORY, DEMONSTRATION AND PRACTICE*).—This aims to give the students the fundamentals and solution to intricate problems in baseball. This includes fielding, throwing, batting, running the bases, line coaching, coaching in general, etc.

3 hours a week; 2nd semester; credit 2 units.

- P. E. 63 (*TRACK AND FIELD COACHING-THEORY, DEMONSTRATION AND PRACTICE*).—This course aims to familiarize the students with different styles, their advantages and disadvantages, in running, stride, starting, throwing and jumping. Special study will be made of those individuals who have made records in their respective events.

3 hours a week; 2nd semester; credit 2 units.

- P. E. 64 (*BASKETBALL COACHING-THEORY, DEMONSTRATION AND PRACTICE*).—This course deals with all the fundamentals in basketball as well as team work which includes the different forms of offense and defense. Guide rules and other problems will be touched upon.

3 hours a week; 1st semester; credit 2 units.

- P. E. 65 (*SWIMMING—THEORY, DEMONSTRATION AND PRACTICE*).—This course will give every students an opportunity to learn and analyze the different strokes in swimming. However, special emphasis will be put on speed swimming. This course also includes fancy diving and life saving.

3 hours a week; 1st semester; credit 2 units.

- P. E. 66 (*TENNIS COACHING-THEORY, DEMONSTRATION AND PRACTICE*).—This course aims to familiarize the students in tennis coaching; the different forms in tennis strokes, their respective advantages and disadvantages and the peculiarity of each.

3 hours a week; 2nd semester; credit 2 units.

- P. E. 67 (*SOCCER COACHING-THEORY, DEMONSTRATION AND PRACTICE*).—This course in soccer coaching aims to impart to the students the scientific side of soccer with special emphasis on training, and the value of team work in the offensive as well as in the defensive games.

3 hours a week; 1st semester; credit 2 units.

- P. E. 68 (*RESEARCH*).—This course is intended only for seniors or graduate students majoring in physical education. It aims to give the students an opportunity to develop their research ability in physical education.

Hours to be arranged; 2nd semester; credit 3 units.

- P. E. 69 (*BOXING AND WRESTLING-DEMONSTRATION AND PRACTICE*).—The aim of this course is to give the students the fundamental principles to be used in the manly art of offense as well as defense.

3 hours a week; 2nd semester; credit 2 units.

- P. E. 70 (*FENCING-DEMONSTRATION AND PRACTICE*).—This course aims to familiarize the students with the fine points in the offensive as well as the defensive side of this art.

3 hours a week; 1st semester; credit 2 units.

SUMMER SCHOOL ANNOUNCEMENT FOR TEACHERS

The summer course in physical education leading to a Certificate in Physical Education. Teachers who are in the field and who possess either a high school or normal school diploma are entitled to enroll in this course. Upon the completion of all the required number of units they will be granted a Certificate in Physical Education.

First Summer

	Units
Physical Education 51	3
Physical Education 58	2
Physical Education 59 or 67	2
	<hr/>
	7

Second Summer

Physical Education 52	3
Physical Educaiton 60	2
Physical Education 61	2
	<hr/>
	7

Third Summer

Physical Education 53	3
Physical Education 62 or (65 for women)	2
Physical Education 63 or (66 for women)	2
	<hr/>
	7

Fourth Summer

Physical Education 57	3
Physical Education 64	2
Physical Education 65 or 69	2
	<hr/>
	7

The College of Liberal Arts

ADMINISTRATIVE OFFICERS

- President of the University: Dr. RAFAEL PALMA (Tel. 57238).
Dean of the College: (Local 35) Professor MAXIMO M. KALAW.
Secretary of the College: (Local 23) Professor ENRIQUE T. VIRATA.
Chief Clerk: (Local 23) Professor CORNELIO C. CRUZ.
Heads of Departments: (With telephone numbers of offices)—Anthropology and Sociology (Local 25): Professor H. O. BEYER.
Botany (Local 34): Professor JOSE K. SANTOS.
Chemistry (Local 42): Professor AMANDO CLEMENTE.
Economics (Local 43): Professor CONRADO BENITEZ.
English (Local 52): Professor ROBERT J. CONKLIN.
Geology (Including geography) (Local 41): Professor JOSE M. FELICIANO.
History (Local 29): Professor LEANDRO H. FERNANDEZ.
Library Science (Local 24): Professor GABRIEL BERNARDO.
Mathematics (Local 17): Professor VIDAL A. TAN.
Modern Languages: (Local 57): Professor EMILIO NATIVIDAD (Acting).
Oriental Languages: Professor CECILIO LOPEZ (Acting).
Physics (Local 19): Professor GEORGE B. OBEAR.
Political Science (Local 35): Professor MAXIMO M. KALAW.
Spanish (Local 36): Professor JAYME C. DE VEYRA.
Zoölogy (Local 33): Professor HILARIO A. ROXAS.
In charge of section
Social Science (Local 35): Professor MAXIMO M. KALAW, Chairman.

CHAIRMAN OF STANDING COMMITTEES

- Graduate Study: Dean MAXIMO M. KALAW (Local 35).
Scholarship: Dean MAXIMO M. KALAW (Local 35).
Curriculum: Dr. AMANDO CLEMENTE (Local 42).
Titles and Degrees: The Secretary of the College. (Local 23).
Athletics: Professor ENRIQUE T. VIRATA (Local 23).

BUSINESS DIRECTORY

OFFICE OF THE DEAN:—The Office of the Dean is located in Room 124 on the first floor of Rizal Hall Annex on Padre Faura.
TELEPHONE CONNECTION.—The Dean's Office has telephone No. 35 on the local exchange.

The Departments are on the local exchange and may be reached only during these hours: from 8 a. m. to 12 noon and from 1 to 8 p. m. From outside call Tel. 56921 (the University number) and ask for department wanted or give local number shown above.

CORRESPONDENCE.—Address all correspondence to the Dean, College of Liberal Arts, University of the Philippines, Manila, P. I.

FACULTY

DEAN

MAXIMO M. KALAW, A.B., LL.B., Ph.D.,
Professor and Head of the Department of Political Science.

PROFESSORS

- CONRADO BENITEZ, LL.B., M.A.
Professor and Head of the Department of Economics and Director of School of Business Administration.
- H. OTLEY BEYER, A.B., M.A.
Professor and Head of the Department of Anthropology and Sociology.
- AMANDO CLEMENTE, M.S., Ph.D.,
Professor and Head of the Department of Chemistry.
- ROBERT J. CONKLIN, B.H., M.A.,
Professor and Head of the Department of English.
- LEANDRO H. FERNANDEZ, A.M., Ph.D.
Professor and Head of the Department of History.
- V. D. GOKHALE, M.A., Ph.D.,
Professor of Mathematics.
- GEORGE B. OBEAR, M.S., M.A., Ph.D.,
Professor and Head of the Department of Physics.
- JOSÉ I. DEL ROSARIO, Lic. Phar., M.S.,
Professor of Chemistry.
- OTTO J. SCHEERER, A.M.,
Professor Emeritus of Philippine Languages.
- VIDAL A. TAN, C.E., Ph.D.,
Professor and Head of the Department of Mathematics.
- HENRY S. TOWNSEND, A.M., Ps.D.,
Professor and Head of the Department of Philosophy.
- JAYME C. DE VEYRA, A.B.,
Professor and Head of the Department of Spanish.

ASSOCIATE PROFESSORS

- BERNABE AFRICA, LL.M., Ph.D.,
Associate Professor of Political Science.
- ENCARNACIÓN ALZONA, A.M., Ph.D.,
Associate Professor of History.
- GABRIEL A. BERNARDO, C.L.S., M.A.,
Associate Professor and Head of the Department of Library Science.
- A. LEYNES CORCUERA, B.S., C.E.,
Associate Professor of Physics.
- JOSÉ M. FELICIANO, M.S., Ph.D.,
Associate Professor and Head of the Department of Geology and Geography.
- MARIANO D. GANA, LL.B., LL.M.,
Associate Professor of Economics and Trade.

- JOAQUIN MARAÑON, M.S., Sc.D.,
Associate Professor of Botany.
- RUTH McCracken-Walser, B.S., M.S.,
Associate Professor of Mathematics.
- EMILIO NATIVIDAD, A.B., B.S.Agr.,
Associate Professor and Acting Head of the Department of Modern Languages.
- EDUARDO QUISUMBING, M.S., Ph.D.,
Associate Professor of Botany.
- FRANCISCO QUISUMBING, M.S., Ph.D.,
Associate Professor of Chemistry.
- HILARIO A. ROXAS, B.S., Ph.D.,
Associate Professor and Head of the Department of Zoölogy
- JOSÉ K. SANTOS, M.S., Ph.D.,
Associate Professor and Head of the Department of Botany.
- ESTHER THOMAS, A.B., M.A.,
Associate Professor of English.
- ANTONIO VITERBO, A.B.,
Associate Professor of English.

ASSISTANT PROFESSORS

- TOMÁS P. ABELLO, B.S.M.E., M.A., Ph.D.,
Assistant Professor of Physics.
- MARIA AGONCILLO, Ph.B., M.A.,
Assistant Professor of English.
- JOSÉ P. APOSTOL, B.S.C., M.A.,
Assistant Professor of Economics.
- QUIRINO AUSTRIA, A.B., LL.B.,
Assistant Professor of Political Science.
- SOFRONIO BALCE, B.S., M.S.,
Assistant Professor of Chemistry.
- PAZ MARQUEZ-BENITEZ, A.B.,
Assistant Professor of English.
- DIONISIO M. BIROSEL, Ph.D.,
Assistant Professor of Chemistry.
- ANGELA BLONDEAN DE LA CANTERA, A.B.,
Assistant Professor of French.
- MARIA C. LANZAR-CARPIO, M.A., Ph.D.,
Assistant Professor of Political Science.
- LEOPOLDO S. CLEMENTE, M.S., Ph.D.,
Assistant Professor of Zoölogy.
- CORNELIO C. CRUZ, M.S., Ph.D.,
Assistant Professor of Geography.
- VERNE DYSON, B.A.,
Assistant Professor of English.
- EDITH P. EDMUNDS, A.B., M.A.,
Assistant Professor of English.
- FERMIN FRANCISCO, A.B., B.S.C.,
Assistant Professor of Trade and Transportation.

- LUIS GONZAGA, A.B., B.S., M.S.,
Assistant Professor of Chemistry.
- PILAR P. HERRERA, M.A., Ph.D.,
Assistant Professor of Chemistry.
- VICENTE M. HILARIO, B.S.E.,
Assistant Professor of English.
- CRISTINO JAMIAS, Ph.B., A.M., (On Leave),
Assistant Professor of English
- AGUSTIN LLENADO, A.B., Ph.D.,
Assistant Professor of German.
- CECILIO LOPEZ, B.S., Ph.D.,
*Assistant Professor of Modern Languages and Acting Head of the
Department of Oriental Languages.*
- SERAFIN E. MACARAIG, M.A., Ph.D.,
Assistant Professor of Sociology.
- ISMAEL MALLARI, A.B., C.L.S.,
Assistant Professor of Library Science.
- FILOMENO MARAVILLAS, B.A.,
Assistant Professor of Spanish.
- JOSEPHINE O. MARQUARDT, A.B.,
Assistant Professor of English.
- WINIFRED O'CONNOR PABLO, A.B., M.A.,
Assistant Professor of English.
- MARIA D. PASTRANA, Phar.D., M.S., Ph.D.,
Assistant Professor of Botany.
- DELFIN DE LA PAZ, B.S.M.E.,
Assistant Professor of Mathematics.
- FRANCISCO PEREZ, Ph.B., M.A., Ph.D.,
Assistant Professor of Mathematics.
- DHIRENDRA NATH ROY, M.A., Ph.D.,
Assistant Professor of Philosophy.
- ISIDORO SANIEL, B.S.E., B.L.S.,
Assistant Professor of Library Science.
- PEDRO A. SANTIAGO, Ph.B., M.S.
Assistant Professor of Accounting.
- PATERNO SANTOS, M.A., Ph.D.,
Assistant Professor of History.
- TERESA YULO-TAN B.S., M.S.,
Assistant Professor of Mathematics.
- MARCELO TANGCO, B.S.E., M.A.,
Assistant Professor of Anthropology.
- JOSE TEOTICO, B.A., LL.B.,
Assistant Professor of Spanish.
- TELESFORO TIENZO, B.S., M.S.,
Assistant Professor of Mathematics.
- EMILIA M. VALENZUELA, B.S.E., M.A.,
Assistant Professor of English.

- ENRIQUE T. VIRATA, M.A., Ph.D.,
*Assistant Professor of Mathematics and Secretary of the College of
 Liberal Arts.*
- NICOLAS ZAFRA, B.S.E., M.A.,
Assistant Professor of History.

PROFESSORIAL LECTURERS

- LINO J. CASTILLEJO, A.B., M.A.,
Professorial Lecturer on Economics.
- LEOPOLDO A. FAUSTINO, M.A., Ph.D.,
Professorial Lecturer on Geography.
- MARCIANO GUEVARA, C.P.A., LL.B.,
Professorial Lecturer on Government Accounting.
- EMETERIO ROA, M.S., Sc.D.,
Professorial Lecturer on Accounting.

LECTURERS

- EUSTAQUIO G. AQUINO, M.A., Ph.D.,
Lecturer on Economics.
- ARSENIO J. JISON, A.B. M.A.,
Lecturer on Banking.
- CIRILO B. PEREZ, B.S.L.S., G.L.S.,
Lecturer on Library Science.

INSTRUCTORS

- ALFREDO BENEDICTO, B.S.C., C.P.A.,
Instructor in Accounting.
- ROSARIO D'AYOTT-BORJA, B.S.E.,
Instructor in Spanish.
- BARTOLOME C. BLANCO, B.S.M.E.,
Instructor in Mathematics.
- DOLORES VELARDE-BUENAVENTURA, A.B., LL.B.,
Instructor in Spanish.
- CARLOS O. BRANDES, Ph.B., LL.Ph. & Litt.,
Instructor in Philosophy.
- PLATON CALLANGAN, Ph.B., M.A.,
Instructor in English.
- EUGENIA INCO-CAPARAS, Phar.Chem., B.S.,
Instructor in Botany.
- PIO G. DE CASTRO, B.S.C., M.B.A., M.A.,
Instructor in Economics.
- MARIANO G. DE LA CRUZ, B.S.M.E.,
Instructor in Physics.
- ARSENIO P. DIZON, A.B., LL.B.,
Instructor in Spanish.
- JOSE DOMANTAY, B.S. M.S.,
Instructor in Zoölogy.
- JEAN EDADES, A.B.,
Instructor in English.

ALFREDO E. ESGUERRA, B.S.C.E., M.S.C.E.,

Instructor in Physics.

GABRIEL F. FABELLA, B.A., B.S.E., M.A.,

Instructor in History.

AMADO T. FELICIANO, D.V.M., M.S.,

Instructor in Zoölogy.

TOMAS S. FONACIER, A.B., (On Leave),

Instructor in History.

BELEN ENRILE-GUTIEREZ, B.S.C., M.S.C., M.S.,

Instructor in Accounting.

FAUSTINO R. LOZADA, B.S.M.E., B.S.C.E.,

Instructor in Physics.

RACHEL MACK, A.B., M.A.,

Instructor in English.

IGNACIO MANLAPAZ,

Instructor in English.

PAZ T. POLICARPIO-MENDEZ, B.S.E., M.A.,

Instructor in English.

ERNESTO T. MENDOZA, B.S.M.E.,

Instructor in Physics.

CARMEN OCAMPO, Ph.B., M.A.,

Instructor in Spanish.

TERESA ZAVALLA-ORTIGAS, B.S.,

Instructor in Mathematics.

JUAN F. PASCASIO, Ph.B., B.S., M.S., (On Leave),

Instructor in Botany.

JOSE PATERNO, B.S.Ch.,

Instructor in French.

JOSE J. PIATOS, A.B., LL.B.,

Instructor in History.

BENEDICTO C. REYES, B.S.E.,

Instructor in Library Science.

CRISANTO DE LOS REYES, B.S.,

Instructor in Physics.

LUISA REYES, B.S.,

Instructor in Mathematics.

FEDERICO ROA, Ph.B.,

Instructor in Mathematics.

MIGUEL ROMUALDEZ, Jr., B.S.C., M.S.,

Instructor in Economics.

CASIMIRO DEL ROSARIO, B.S.C.E., M.S., (On Leave),

Instructor in Physics.

PURA SANTILLAN, B.S., M.S., (On Leave),

Instructor in French.

ANTONIO G. SANTOS, B.S., Ph.B., M.S.,

Instructor in Chemistry.

FELIX V. SANTOS, B.S., Ph.D.,

Instructor in Zoölogy.

- EULOGIO C. TOLENTINO, B.S.M.E.,
Instructor in Physics.
- ARTEMIO L. TULIO, B.A., B.S.C.,
Instructor in Accounting.
- BARTOLOME A. UMayAM, Ph.B., LL.B.,
Instructor in Political Science.
- MARIA T. VALLARTA, Phar.Chem., B.S.,
Instructor in Botany.
- JESUS Z. VALENZUELA, B.J., M.A.,
Instructor in English.
- GREGORIO T. VELASQUEZ, B.S., M.S.,
Instructor in Botany.
- NATIVIDAD P. VERZOSA, B.S.,
Instructor in Library Science.
- GREGORIO F. ZAIDE, Ph.B., M.A.,
Instructor in History.

ASSISTANT INSTRUCTORS

- MARIANO ABAGON, B.S.,
Assistant Instructor in Botany.
- ADELAIDA BENDAÑA, Ph.C., B.S., (On Leave),
Assistant Instructor in Chemistry.
- LUCIA MANIKIS, B.S.,
Assistant Instructor in Zoölogy.
- PETRONILA MARASIGAN, Ph.C., B.S.,
Assistant Instructor in Botany.
- FLORENCIO MEDINA, B.S.Chem.,
Assistant Instructor in Chemistry.
- ROSARIO MENDOZA, Phar.Chem.,
Assistant Instructor in Chemistry.
- CARIDAD MORENTE, B.S.,
Assistant Instructor in Zoölogy.
- JOSEFA GOTAUCO DEL MUNDO, Ph.Ch., B.S., (On Leave),
Assistant Instructor in Chemistry.
- ADELAIDA ORETA, Phar.G., B.S., M.S.,
Assistant Instructor in Chemistry.
- CONSORCIA PANGANIBAN, Phar.Chem.,
Assistant Instructor in Chemistry.
- ANGELA DE LA PAZ, Phar.Chem.,
Assistant Instructor in Zoölogy.
- LORETO C. REYES, B.S.,
Assistant Instructor in Chemistry.
- ANTONIO RODRIGUEZ, B.S.,
Assistant Instructor in Chemistry.
- JOSE V. SANTOS, B.S.,
Assistant Instructor in Botany.
- NATALIA J. SISON, Phar.Chem., B.S.,
Assistant Instructor in Chemistry.

JUAN TEVES, B.S.,

Assistant Instructor in Geology and Geography.

ARSENIA URQUICO, B.S.,

Assistant Instructor in Zoölogy.

TRINIDAD VILLEGAS, Phar.Chem.,

Assistant Instructor in Botany.

JOSE V. YAP-CHIONGCO, B.S.,

Assistant Instructor in Zoölogy.

STANDING COMMITTEES OF THE COLLEGE OF LIBERAL ARTS

COLLEGE GRADUATE COMMITTEE

Dean MAXIMO M. KALAW,
Chairman
Prof. ROBERT J. CONKLIN,
Member
Prof. JOSÉ K. SANTOS,
Member
Prof. AMANDO CLEMENTE,
Member
Prof. LEANDRO H. FERNANDEZ,
Member
Prof. CONRADO BENITEZ,
Member
Prof. HILARIO A. ROXAS,
Member
Prof. ENRIQUE T. VIRATA,
Member

SCHOLARSHIP COMMITTEE

Dean MAXIMO M. KALAW,
Chairman
Prof. NICOLAS ZAFRA,
Member
Prof. BERNABE AFRICA,
Member
Prof. HILARIO A. ROXAS,
Member
Prof. EMILIA M. VALENZUELA,
Member
Prof. ENRIQUE T. VIRATA,
Member
Prof. PEDRO A. SANTIAGO,
Member

COLLEGE CURRICULUM COMMITTEE

Prof. AMANDO CLEMENTE,
Chairman
Prof. VIDAL A. TAN,
Member
Prof. JOAQUIN MARAÑON,
Member
Prof. CORNELIO C. CRUZ,
Member
Prof. ENRIQUE T. VIRATA,
Member

COMMITTEE ON DEGREES AND TITLES

Prof. ENRIQUE T. VIRATA,
Chairman
Prof. QUIRINO AUSTRIA,
Member
Prof. CORNELIO C. CRUZ,
Member

COLLEGE ATHLETICS COMMITTEE

Prof. ENRIQUE T. VIRATA,
Chairman
Prof. NICOLAS ZAFRA,
Member
Prof. V. D. GOKHALE,
Member
Mr. MIGUEL ROMUALDEZ, JR.,
Member

GENERAL INFORMATION

COURSES OFFERED

The College of Liberal Arts offers courses of study designed to afford a broad and liberal cultural training leading to the degrees of Bachelor of Arts, Bachelor of Science, and Bachelor of Philosophy. It offers also four-year vocational courses in chemistry and library science and two year courses preparatory to the professions of medicine and law. Students intending to continue their courses in the College of Education should take the first year of the general culture course.

Some courses are offered in advance of those open to the ordinary undergraduate students and lead to the degrees of Master of Arts and Master of Science.

RELATION TO OTHER COLLEGES

The College of Liberal Arts is not only a separate entity in itself but also a service college for other colleges. Many of its departments are doing work for the other schools and colleges. A great part of its faculty belong also to the faculties of the other schools and colleges. Students enrolled in the College of Liberal Arts but desiring to take extra subjects in any other college, like the College of Education or the School of Pharmacy can do so. While freshmen in the College of Liberal Arts they may be also allowed to take one or two subjects in any of the foregoing schools and colleges and after the first year they may, if they want to, transfer to those schools.

ENTRANCE REQUIREMENTS

Applicants seeking admission to this college must be graduates of a standard four-year high school recognized by the Secretary of Public Instruction, or must have completed an equivalent education calling for at least 16 units of credit in the following high school subjects:

	<i>Units</i>
English	5
History	2
Mathematics	2½
Biology	1
Physics or Chemistry	1
Total	<hr/> 11½

To make up the total number of units required for entrance, history, government, botany, zoölogy, chemistry, physiology, mathematics, language, literature, economics, general science, geography, psychology, pedagogy,

agriculture, bookkeeping, business law, domestic science, drawing, manual training, or music may be offered.

Besides the foregoing entrance requirements, new students must take an entrance test (Type A) consisting of the following high school subjects:

	<i>Weight</i>
English and Composition	200
Mathematics	100
History	100
Physics	100
Biology	100
Intelligence Test	100
<hr/>	
Total	700

By virtue of a resolution adopted by the University Council at the meeting held on January 9, 1932, the giving of the test as a requirement for entrance to this college was suspended for the academic year 1932-1933, excepting the departmental tests in Physics and in Mathematics.

All new students seeking admission to this college must file with the Registrar's office a transcript of their high school record on or before May 15, 1932. U. P. Forms Nos. 1 and 3, copies of which may be secured from the Registrar's office, should be filled in for this purpose.

All entrance deficiencies must be made up within one year.

SPECIAL STUDENTS

Persons over 20 years of age may, under certain circumstances, even without satisfying the entrance requirements, be admitted as special students not candidates for degrees. The applicants must give evidence of ability to do creditable work; but they shall not receive any credit for work done in this college; they shall, however, report as having completed "satisfactorily" or "unsatisfactorily" the subject or subjects in which they are registered at the end of the given semester. They will not be allowed to register for more than two years and to enroll for more than nine credit hours a week in classroom or laboratory work except by special permission of the Dean.

The minimum entrance requirement, for purposes of this rule, is the completion of a standard four-year high school or its equivalent.

ADMISSION TO ADVANCED STANDING

When a student matriculates in this college he shall be granted advanced credit upon presentation of credentials showing that he has attended and passed in some other institution of collegiate standing courses fully equivalent to those offered in this University for which advanced credit is sought. Advanced credit may be either general or specific; provided that whenever specified credit is awarded, the person making the award should name the particular subject or subjects for which advanced credit is given.

Advanced credit may be awarded either by the Registrar or by the heads of departments concerned, provided that the Registrar shall award advanced credit only to students graduated from an institution recognized by the University Council and only for subjects listed in the course or courses duly recognized. The heads of the departments concerned shall award advanced credit to all applicants from unrecognized institutions, and to those from recognized institutions who have taken part of, but have not completed, the entire courses recognized; provided that the award of advanced credit by a department head shall be made only at the request of the dean of the college where the applicant desires to register or is registered and upon passing on the part of the applicant an examination to be given for the purpose.

Application for advanced credit shall be made to the registrar or to the dean of the college concerned not later than July 15 after matriculation. Upon receipt of an application, the dean shall cause the proper department head to examine the applicant or applicants. This examination shall be held on or before July 31, and its result shall be reported to the dean, and the registrar not later than August 1 of the same year. Students who fail to take these examinations in the first year of their residence may do so the following year, but no examination for advanced credit may be held between August and May of each year, unless specially authorized by the faculty concerned.

Provided, however, that no advanced credit shall be counted towards graduation within the same academic year in which the advanced credit is given except in the case of students admitted to the last year of any course, and in that case the total units of advanced credit that may be granted shall not exceed the equivalent of one academic year's work. In the case of students taking a three-year course, no advanced credit for more than two years of academic work or its equivalent shall be granted, and three years of academic work or its equivalent in the case of students admitted to a four-year course, etc.

RULES ON ATTENDANCE

1. The rules on attendance herein laid down shall be followed in this college and in the School of Business Administration including the Departments of Military Science and Physical Education.

2. No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean or director of the college concerned; provided, that no student may matriculate in a college or school or enroll in a course later than two weeks after classes begin. A college or school, or department, to meet special conditions, may shorten this period of extension.

3. Any student, who for unavoidable cause, is obliged to absent himself from any college or required university class must obtain an excuse written on U. P. Form No. 97 from his dean or director to be presented to his instructors.

4. Excuses for absence shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

5. Excuses are for time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

6. When the number of hours lost by absence by a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any other scheduled work in one subject for that semester, he shall be dropped from the class roll with a grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

7. Instructors shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

8. A student shall be given a grade of incomplete in a course if he is absent from the final examination, provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of his dean or director.

9. Any student who drops a course or withdraws from a college or school without the approval of his dean or director shall be subject to curtailment of registration privileges. Prolonged leave of absence must be sought by written petition to the dean or director, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired; provided, however, that student granted leave under this clause shall be subject to the scholarship rules of the college or school where he is duly registered. Indefinite leave of absence shall not be granted.

10. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to his dean or director. If the petition is granted the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall file with the dean or director of his college or school. Without such petition and favorable action no record of honorable dismissal will be made.

11. Attendance in the Graduate School shall not be governed by the foregoing rules.

12. Certificates of absences due to illness must be secured from the University physician.

PENALTIES FOR EXCESSIVE ABSENCES

1. A student whose number of absences for one semester exceeds 15 per cent of the recitation or lecture hours in any one subject for that semester will have his final semestral grade reduced by ONE point by the instructor, except as provided in rule 2.

2. No reduction of grade shall be made under rule 1 if the majority of absences be excused absences, when owing to the nature of the work, the instructor is of the opinion that the student has made up for his absences.

3. A student whose number of absences for one semester exceeds 20 per cent of the recitation or lecture hours in any one subject for that semester

will be dropped automatically from the class roll and given a grade of "5" by the instructor, except as provided in rule 4.

4. No grade shall be given under rule 3 should the majority of absences be excused absences, nor in this case shall the student be dropped, if in the opinion of the instructor approved by the head of the department, he can make up for his absences. Furthermore, the penalty shall not be imposed if the majority of absences be excused and if the majority shall have occurred toward the end of the semester, provided the student's grade shall have averaged "1" or nearer "1" than "3." This section shall not be interpreted to excuse a student from final examination.

GRADES OF SCHOLARSHIP

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such a way as the instructor may determine, that he is performing the work of the course in a satisfactory manner.

The results of examinations, together with class work, will be ranked and reported in five grades—1, 2, 3, 4, 5. A grade of 1 denotes marked excellence. A grade of 2 indicates that the student's work has been thoroughly satisfactory. A grade of 3 denotes a pass. A grade of 4 denotes a condition. Courses in which students have obtained a grade of 4 will not be credited to them, except upon passing a second examination. A grade of 5 indicates failure and the necessity of repeating the entire course. The report in case of absence from the examination, or failure to perform any of the allotted work in a given course, is *incomplete*. Work so required must be made up within a year.

A student who has received a grade of 2 or a grade of 3 in a given subject is not allowed to take a second examination for the purpose of improving his grade.

CREDITS

One university unit of credit is one hour lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and in the technical courses, three hours of drafting or shop work are regarded as the equivalent of one recitation or lecture.

CONDITION AND FAILURES

For the removal of conditions, students shall have the privilege of taking one examination during the week preceding the opening of the following session or any other examination required by the faculty without the payment of a fee. Examination may be held at other times only by special permission of the faculty and on payment of ₱10, provided that all conditions must be made up before the opening of the following session.

Students not in residence and who are permitted to take an examination for removal of condition shall be required to pay the registration fee of ₱5 and such other fees as may be required by the Registrar.

Any student who is reported as having failed in a given subject of study or after being conditioned, does not pass a second examination for the re-

removal of the condition, will have to repeat every such subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit him to review a subject in which he is thus conditioned with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or semester.

Any student who has been reported with a grade of Incomplete or a grade of 4, who does not within a year better such grades, will automatically be recorded as having failed in such subjects. Any student who, for reasons of poor scholarship, is dropped with the approval of the Dean from any subject of study by the instructor, will be given a grade of 5 in that subject, unless the faculty shall otherwise determine.

No candidate is to be recommended by the Council for any degree, title, or certificate until all required examinations have been passed.

MILITARY SCIENCE

Military Science and Tactics is a required subject in the curricula of this college. It is a prerequisite for graduation and must be completed during the first two years of residence in the University. In case a student, after two years of his college work, is conditioned in military science for one semester or more, said student shall not be permitted to enroll in the third year of his course without taking military science unless exempted therefrom by competent authority.

Any student exempted from the course is required to take, in lieu of this exemption, a corresponding number of units of work to be taken in some academic department approved by the adviser and the dean; provided that in the evaluation of the equivalent of military science, each semester's work in this subject shall correspond to $1\frac{1}{2}$ units of academic work; and provided further that no subject or subjects taken prior to the granting of exemption by the authorities concerned shall be allowed as substitution for military science.

PHYSICAL EDUCATION

1. All students must submit to medical and physical examinations prior to registration in the University.

2. They are required to take physical education during their first three years in the college. Any student who wilfully refuses to report for physical education shall be subject to disciplinary action.

3. During their freshman year students are to take two hours a week of physical education; one hour lecture in personal and community hygiene and the other hour, practical. The sophomores and juniors will take one hour a week of practical work.

EXEMPTIONS IN PHYSICAL EDUCATION AND IN MILITARY SCIENCE

All exemptions and excuses from the work in physical education and in military science which will be credited for any semester must be claimed and approved during that particular semester.

All candidates for graduation in March must have their records cleared up not later than the first day of February immediately preceding, with the exception of those academic subjects including physical education and military science in which they are actually enrolled during that semester.

After February 1st, no additional credit will be considered for graduation in the following March, except in those academic subjects including physical education and military science in which the student is actually enrolled during that semester.

UNIVERSITY INFIRMARY

Medical examination is required of each student once a year. The examination is held generally at the opening of the school in June and at such other times as may be requested by competent authorities.

If a student is sick and is unable to go to the dispensary for treatment, he is entitled to request one of the attending physicians of the Infirmary to visit him in his house or dormitory. If he is confined in another hospital, the physicians of the Infirmary will be available if he so desires. Post-operative cases may be transferred from another hospital to the Infirmary if those cases have been operated on by one of the members of the medical staff of the Infirmary.

Medicines for common illness are given free, but expensive medicines like those used for injections including patent medicines, laboratory and X-ray examinations are borne by the student.

If a student prefers to stay at home or to be treated by a private physician in case of illness requiring absence from college, he nevertheless should notify the University Health Service within three days after the absence has been incurred. Notification may be sent by mail or by messenger or transmitted over the telephone. All excuses from class because of illness are accepted only on recommendation of the University Health Service.

SCHOLARSHIP WITH FREE TUITION FEES

A valedictory scholarship with free tuition fee for a period of one academic year is granted to the student highest in rank (valedictorian) graduating from a standard four-year high school, trade school, commercial school, or other private school of the same standing in the Philippines.

A salutatory scholarship with free tuition fee for a period of one academic year, is also granted to the student second in rank (salutatorian) graduating from the schools mentioned in the preceding paragraph.

Formal application for these scholarships should be filed with the Registrar's office Room 107, University Hall before registration, and the application should be accompanied by a certificate signed by the principal or by the director of the school from which the applicant has graduated. These scholarships are granted only on condition that the student meets all the requirements for admission to this University.

FEES

Every student admitted to this college pays the following fees:

Tuition	P30.00 a semester.
Deposit	15.00 *
Miscellaneous	17.50

Total	P62.50
-------------	--------

* Will be refunded at any time the student leaves the University.

Every semester thereafter, the student only pays P42.50 for all his tuition fees. In case however he elects courses carrying with them laboratory work, he pays the required laboratory fees, to wit:

Chemistry	P15.00 a semester
Botany, Zoölogy, or Geology	10.00 " "
Physics of Anthropology 108	5.00 " "

In case a student does not carry full load, he shall be charged on the basis of P2.00 per unit of credit, provided that the courses taken do not exceed fifteen units.

Graduate Department.—P40.00 a semester. In case a graduate student does not carry full load, the computation of his tuition fee a semester will be on the following basis:—(1) Thesis or five clock hours of work or less a week, P15.00; more than five clock hours of work but not exceeding ten, P30.00; more than ten, P40.00.

Dropping of subjects.—For change of matriculation; that is, enrollment for additional subjects, substitution of one subject for another, or for dropping a subject alone, a fee of P1.00 is charged.

A fine of P2.00 is charged for unauthorized dropping of subject. Upon failure of the student to pay this amount, the same will be deducted from his deposit.

REFUND OF FEES

Students who have paid their tuition and laboratory fees and who leave the University are entitled to a refund of their tuition and laboratory fees in accordance with the following schedule:

Within one week after registration	80
During the second, third, and fourth weeks after registration	50
After the fourth week and thereafter	No refund.

Laboratory fees will not be refunded after one week from the date of registration where change is made from one course to another.

STUDENTS' EXPENSES

The expense for textbooks, instrument, etc., varies from P25 to P100 per annum.

The cost of living in Manila varies from P40 to P60 a month.

A fair estimate of the yearly expenses of the student is from P400 to P800 a year, but much depends on the personal taste of the student.

FACULTY ADVISERS

Each undergraduate student, on entering College, is assigned to a member of the Faculty who acts as his adviser and gives him advice and information relating to his college life. Before registration for each semester the student is required to submit his choice of studies to his adviser for approval; all changes in registration during the semester must likewise receive the adviser's approval.

A general culture student must make the choice of the department in which he will do major work at the beginning of the second year. The head of that department or his authorized representative becomes his adviser and this adviser should be consulted freely on all matters relating to subsequent registration.

The commerce student likewise makes choice of the line of specialization offered in the commerce curriculum at the beginning of the second year. The head of the Department of Economics and Business Administration or his authorized representative becomes his adviser.

ACADEMIC LOAD¹

No student registered in this college will be allowed to take more than eighteen non-laboratory units or twenty-one units including laboratory work during each semester; Provided, however, that this rule shall not affect or alter any existing course duly approved by the University Council and the Board of Regents in which more than twenty-one units are required; Provided, further, that during the last semester of his course, a student may take twenty-one non-laboratory units or twenty-four units including laboratory work if he needs the additional units for graduation at the end of such semester.

CHANGE OF COURSE OF STUDY

Students may transfer to another course of study only during the first week of the semester with the approval of the Dean.

EXCLUSION OF STUDENTS

Any student who fails to satisfy his instructor in his work at any time shall be reported to the Dean for dismissal from the course with a grade of "5" unless the faculty shall otherwise decide.

Any instructor may also drop from the class any student who violates the rules of absences.

DISCIPLINE

Students of the College are expected to conduct themselves properly and with due decorum within and without the University halls. All breaches of discipline shall be reported to the Dean, who will immediately take the necessary steps for the correction of the offense. In grave cases that may lead to the suspension or expulsion of the guilty student, the

¹ In determining the academic load of students Math A and Physics A should be counted as having no unit and three units of work, respectively.

faculty of the College may, at the discretion of the Dean, be consulted. The final decision in such cases shall rest with the Executive Committee of the University Council, after giving the student a chance to be heard.

SCHOLARSHIP RULES

1. **GRADE POINTS.**—For the purposes of these rules, students' grades shall be evaluated in terms of grade points as follows:

A grade of "1" counts 3 grade points for every unit of credit.

A grade of "2" counts 2 grade points for every unit of credit.

A grade of "3" counts 1 grade point for every unit of credit.

A grade of "4" counts 0 grade point for every unit of credit.

A grade of "5" counts—2 grade points for the course.

Grades obtained in all courses (including noncredit courses)¹ except those given for work in Military Science and Physical Education shall be taken into account in determining the scholarship status of students.

2. **GOOD STANDING.**—A student is in good scholastic standing if he earns a total number of grade points equivalent to at least 50 per cent of the total number of units for which he is registered.

3. **PROBATION.**—A student who can not satisfy the minimum requirement under Rule No. 2 shall be placed on probation.

Such student shall register only for as many units as those in which he got at least a four, but his total load must not exceed fourteen units.

4. **INCREASE IN ACADEMIC LOAD.**—A student who is penalized under these rules must pass all his courses before he may increase his load to the maximum allowed by the rules of the College.

5. **DISMISSAL.**—The following shall be immediately dismissed from the College of Liberal Arts:

I. A student whose sum total of grade points is less than zero.

II. A student on probation for two successive semesters who can not satisfy the minimum requirement under Rule No. 2.

6. **NOTICE OF DELINQUENCY.**—The parents or guardian of a student who becomes delinquent under these rules will be notified of such delinquency.

DEPARTMENTAL HONORS

1. Any student who has completed 60 units of credit excluding Military Science and Physical Education and who has obtained an average grade of 1.5 or better in courses already taken in one department may be exempted by the Head of the Department from compulsory attendance in any course to be taken in that department.

2. Any student who shows great proficiency in his major subject and obtains no grades lower than 2 and an average grade of 1.5 or better in all courses taken in the major department shall be given upon completion of his course a departmental Certificate of Proficiency signed by the head of the department and the Dean. The names of students granted departmental honors will appear on the Commencement Program.

3. Other departmental honors such as awarding of prizes and granting

¹ These courses are evaluated in terms of units on the basis of 1 unit for 1 hour of recitation or lecture and 1 unit per 3 hours of laboratory.

of other privileges may be given to students who show special ability. The granting of such honors shall be subject to rules and regulations which the particular department may adopt; provided, however, that said rules and regulations are not in conflict with any of the preceding rules and other existing regulations of the University.

GENERAL REQUIREMENTS FOR GRADUATION

1. Requirements for graduation in A.B., Ph.B., B.S. for students graduating in March, 1935, and thereafter.

a. Every candidate for graduation must have an average of 2.85 or better, the average being computed on the basis of units.

b. Students who cannot satisfy this requirement shall, however, be allowed to graduate upon completion of 154 units. That of the additional 30 units, at least 18 units shall be in the senior college.

c. None of the work done to satisfy this additional requirement shall count towards any other degree.

2. The candidate must have resided in the College of Liberal Arts of the University of the Philippines for at least two consecutive semesters immediately prior to receiving a title or degree.

3. The candidate must notify his adviser during June advising period that he is applying for his degree or title. In case of eligibility, the adviser should recommend the student for graduation either in October or in March.

4. No students with standing obligations during his residence in the University will be recommended for graduation.

GRADUATION WITH HONORS

Associate title.—The title of Associate in Arts “with marked distinction” will be granted to students of the College of Liberal Arts who obtain a grade of 1 in not less than 90 per cent of all subjects in their course and a grade of 2 in all other subjects; the title of Associate in Arts “with distinction,” to students who obtain a grade of 1 in not less than 80 per cent of all subjects in their course and a grade of 2 in all other subjects; provided that such students have earned in the University of the Philippines all the credits required for graduation.

Bachelor's degree.—The Bachelor's degree *summa cum laude* will be conferred on students of the College of Liberal Arts who obtain a grade of 1 in not less than 75 per cent of all subjects taken during their residence in the College and a grade of 2 in all other subjects; the Bachelor's degree “*cum laude*,” on students who obtain a grade of 2 or better in all subjects taken; provided that such students have earned in the University of the Philippines all the credits submitted for graduation.

THE GENERAL CULTURE COURSES

Students who desire an all-around general college education or who contemplate graduate study here or abroad in some general field of knowledge are urged to take these courses. They can also lay emphasis on any particular subject in which they may have a special interest. No other

kind of training than these general culture courses will prepare the graduates so well for social and intellectual leadership.

These courses have the following characteristics:

(a) The first year is the same for all general courses and is described above under "Common Year."

(b) At the beginning of his second year, when he comes up for registration, the student must choose some subject in which he has a special interest. He is then said to have "selected" the department in which that subject is taught and will henceforth be known as a "Major Student" of that department. The department will be his "Major Department." He will thereafter be aided in his registration and selection of work by an adviser from that department.

(c) The general cultural courses all fall into one of another of three types:

The B.A. type in which more work is taken in Languages (Groups I and II) than either in Group III or in Group IV.

The B.S. type in which more work is taken in Science and Mathematics (Group III) than either in languages (Groups I and II) or in the Social Sciences (Group IV).

The Ph.B. type in which more work is taken in the Social Sciences (Group IV) than in either of the above divisions.

(d) They must be in residence in the College of Liberal Arts for at least two consecutive semesters to secure either the title of Associate in Arts or the Baccalaureate degree.

(e) The title of Associate in Arts is granted at the end of their second year to all regular general students who have successfully pursued their curricula of studies and who have complied with above requirements.

(f) A graduate from the general courses may take but one baccalaureate degree at a time. By remaining in residence in the College of Liberal Arts for another year and successfully completing a full year's curriculum of additional courses he may secure a second baccalaureate degree.

(g) Regular general students must follow approved curricula of studies and may not change from one to another without the consent of their major departments and of the Dean.

THE COMMON FIRST YEAR OF ALL GENERAL CURRICULA

FIRST SEMESTER		SECOND SEMESTER	
	<i>Units</i>		<i>Units</i>
Group I: English	3	Group I: English	3
Group II	3	Group II	3
Group III	3 or 5	Group III	3 or 5
Social Science 1	3	Social Science 2	3
Elective	3	Elective	3

Additional requirements.—Students must take during their first two years of residence:

(1) Five units in Laboratory Science.

(2) Any *two* of the following: History 5, Political Science 4, Anthropology 1, Economics 2, Sociology 11, Library Science 12 or Anthropology 3 (old 103). (These additional requirements do not apply to the preparatory education course which covers one year only.)

REQUIRED NUMBER OF UNITS IN THE GENERAL CURRICULA

(Including the Common First Year)

	A.A.	B.A.	B.S.	Ph.B.
Minimum requirement in Group I (English)	12	15	12	15
Minimum requirement in Group II (French, German, Latin, Spanish, Japanese, Chinese, Philippine Linguistics)	12	30	18	12
Minimum requirement in Group III (Astronomy, Botany, Chemistry, Geology, Meteorology, Geography, Physics, Physiography, Experimental Psychology, Zoölogy, Mathematics, Physical Anthropology) (1)	15	15	30	15
Minimum requirement in Group IV (Anthropology, Economics, Education, History, Library Science, Philosophy, Political Science, Psychology, Sociology, Social Sciences) (2)	21	21	21	45
Additional Units in subjects chosen by the major department	—	34	37	31
Free electives to be chosen by the student	3	9	6	6
Military Science and Tactics (3)	6	6	6	6
Physical Education	6	8	8	8
Total number of Units required for Title and Degree	75	138	138	138

(1) Five units must be in Laboratory Science.

(2) Social Science 1 and 2 and six units of any two of: History 5, Political Science 4, Anthropology 1, Economics 2, Library Science 12, Sociology 11, or Anthropology 3 (Old 103) are compulsory.

Group IV under A.A., B.A., and Ph.B. must include 3 units of Philosophy 1. (Approved by the University Council and the Board of Regents on March 7 and 13, 1931, respectively.)

(3) To be taken during the first two years' residence in the University. Students who are exempted from Military Science and Tactics shall be required in lieu of this exemption a corresponding number of units of work in some academic department approved by the adviser and the Dean, provided that no subject or subjects taken prior to the granting of the exemption shall be allowed as substitution for Military Science and Tactics.

RULES ADOPTED BY THE UNIVERSITY COUNCIL TO GUIDE DEPARTMENTS IN MAKING UP GENERAL CURRICULA

I. The Major Department has the selection of all semestral courses needed to satisfy the requirements for minimum and additional units

except (a) those taken by the student in his first year and (b) his free electives.

II. The Department may choose semestral courses taught in the College of Liberal Arts or in any other college. A semestral course taken in another college count in one of the four groups if it is of the same nature; otherwise it shall be considered as an allied subject and shall not be counted in any group.

III. No student shall offer more than 40 per cent of the units required for graduation in a single department. To this limit may be added fractional course.

IV. Concentration is to be avoided. Courses within a group shall be spread over the schedule as evenly as possible.

THE PREPARATORY COURSES

The following courses prepare students for the Colleges of Education, Law, and Medicine.

THE ONE-YEAR CURRICULUM IN PREPARATORY EDUCATION

(Required for admission to the College of Education)

Register in the first year general cultural course.

THE TWO-YEAR CURRICULUM IN PREPARATORY LAW

(Leads to the title of Associate in Arts. Required for admission to the College of Law)

FIRST YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Engl 1	3	3	Engl 1	3	3
Span 10	3	3	Span 11	3	3
Social Sc 1	3	3	Social Sc 2	3	3
Pol Sc 2	3	3	Phil 1	3	3
Hist 5	3	3	Pol Sc 4	3	3
Mil Science	3	1½	Mil Science	3	1½
Phys Education	2	2	Phys Education	2	2
Total		18½	Total		18½

SECOND YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Engl 8	3	3	Engl 9	3	3
Span 12	3	3	Span 13	3	3
Science	3 or 9	3 or 5	Science	3 or 9	3 or 5
Hist 2	3	3	Pol Sc 5	3	3
Pol Sc 3	3	3	Pol Sc 6	3	3
J. H. R.	1	1	J. H. R.	1	1
Mil Science	3	1½	Mil Science	3	1½
Phys Education	1	1	Phys Education	1	1
Total		20½	Total		20½

THE TWO-YEAR CURRICULUM IN PREPARATORY MEDICINE

(Leads to the title of Associate in Arts. Required for admission to the College of Medicine)

FIRST YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Engl 1	3	3	Engl 1	3	3
Fr 1 or Ger 1	3	3	Fr 1 or Ger 1	3	3
Zoöl 1	9	5	Bot 1	9	5
Chem 23	9	5	Chem 23	9	5
Math 7	3	3	Math 8	3	3
Mil Science	3	1½	Mil Science	3	1½
Phys Education	2	2	Phys Education	2	2
Total		22½	Total		22½

SECOND YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Fr 2 or Ger 2	3	3	Fr 2 or Ger 2	3	3
Chem 26	9	5	Chem 26	9	5
Chem 27	9	5	Zoöl 21	9	5
Phys 31	9	4	Phys 32	9	4
Soc. Sc 1 ¹	3	3	Soc. Sc 2 ¹	3	3
Mil Science	3	1½	Mil Science	3	1½
Phys Education	1	1	Phys Education	1	1
Total		22½	Total		22½

THE THIRD YEAR OF A COMBINED LIBERAL ARTS-MEDICINE COURSE

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Fr 1 or Ger 1	3	3	Fr 1 or Ger 1	3	3
Psyc 1	3	3	Phil 1	3	3
Zoöl 105	9	5	Zoöl 106	9	5
Chem 29	9	5	Chem 28	9	5
Soc 11	3	3	Anth. 108	4	3
Elective		3	Elective		3
Phys Education	1	1	Phys Education	1	1
Total		23	Total		23

NOTE.—The completion of this course and the first year of the College of Medicine will entitle the student to obtain the degree of Bachelor of Science in the College of Liberal Arts.

¹ Premedical student can take History 2 and 5 instead of Social Science I and II provided they have had the necessary prerequisites.

THE VOCATIONAL COURSES

THE COURSE IN CHEMISTRY

(Leading to the degree of Bachelor of Science in Chemistry with the title of Associate in Arts (A.A.) at the end of the second year)

The course leading to the degree of Bachelor of Science in Chemistry is intended to prepare students for technical positions. In the fourth year of the course a large amount of work can be elected to fit the student for the special line of chemical work which he desires to pursue.

FIRST YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Chem. 23	9	5	Chem. 23	9	5
English 1	3	3	English 1	3	3
German 1	3	3	German 1	3	3
Soc. Sc. 1	3	3	Soc. Sc. 2	3	3
Military Science	3	1½	Math. 8	3	3
Phys. Ed.	2	2	Military Science	3	1½
			Phys. Ed.	2	2
Total		17½	Total		20½

SECOND YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Chem. 26	9	5	Chem. 26	9	5
Chem. 27	9	5	Chem. 28	9	5
Phys. 31	4	4	Phys. 32	6	4
German 2	3	3	German 2	3	3
Math. 17 (Anal. Geom)	3	3	Math. 18 (Calculus) ...	3	3
Military Science	3	1½	Military Science	3	1½
Phys. Ed.	1	1	Phys. Ed.	1	1
Total		22½	Total		22½

THIRD YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Chem. 29	9	5	Chem. 103	9	4
Phys. 109	9	5	Geol. 103	7	3
Math. 105	3	3	Lib. Sc. 51	1	1
Geol. 1	3	3	Phys. 110	3	3
Zoöl. 3	1	1	Chem. 105	9	4
Phys. Ed.	1	1	Phys. Ed.	1	1
Total		18	Total		16

FOURTH YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Chem. 102	9	4	Chem. 202	9	5
Chem. 117	3	3	Elective (Chem.) .....	..	8
Drawing	6	2			
Bot. 1	9	5			
Total		14	Total		13

THE FOUR-YEAR CURRICULUM IN LIBRARY SCIENCE

Leading to the degree of Bachelor of Science in Library Science (B.S. Library Science), with the title of Associate in Arts (A.A.) at the end of the second year.

FIRST YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
English 1	3	3	English 1	3	3
French 1 or Spanish 10	3	3	French 1 or Spanish 11	3	3
Lab. Sc. ^a	5 or 3		Lab. Sc. ^a	5 or 3	
Social Science 1	3	3	Social Science 2	3	3
Elective	3	3	Elective	3	3
Military Science	3	1½	Military Science	3	1½
Physical Education ...	2	2	Physical Education ...	2	2
Total	18	18½	Total	18	18½

SECOND YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
English 11	3	3	English 12	3	3
English 8	3	3	English 107	3	3
French 2 or Spanish 12	3	3	French 2 or Spanish 13	3	3
Psychology 1	3	3	Philosophy 1	3	3
History 5	3	3	History 104	3	3
Military Science	3	1½	Military Science	3	1½
Physical Education ...	1	1	Physical Education ...	1	1
Total	17	17½	Total	17	17½

THIRD YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
English 116	3	3	English 117	3	3
English 120	3	3	English 121	3	3
English 122	3	3	English 123	3	3
German 1	3	3	German 1	3	3
Economics 1	3	3	Sociology 11	3	3
Library Science 121 ^b ..	3	3	Library Science 122 ..	3	3
Physical Education ...	1	1	Physical Education ...	1	1
Total	19		Total	19	

FOURTH YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
Library Science 167 ..	3	3	Library Science 124 ..	3	3
Library Science 123 ..	3	3	Library Science 166 ..	2	2
Library Science 126 ..	2	2	Library Science 157 ..	3	3
Library Science 155 ..		4	Library Science 155 ..		4
Library Science 165 ..	3	3	Library Science 165 ..	3	3
Elective	2	2			
Total	17		Total	15	

^a Five units of laboratory science required.

^b For description of Library Science courses, see under The Library (Department of Library Science), in subsequent pages of this catalogue.

THE COURSE IN BUSINESS ADMINISTRATION

(Leading to the degree of Bachelor of Science in Business Administration with the Title of Associate in Arts at the end of the second year.)

For information, see School of Business Administration in subsequent pages.

COURSES OF INSTRUCTION

The courses of study offered in the College of Liberal Arts are listed under the several Departments and Sections of instruction.

These courses are divided into four classifications:

Courses A, B, C, etc. are entrance subjects and without credits.

Courses 1 to 99 are primarily for first and second year students.

Courses 100 to 199 are primarily for third and fourth year students. Graduate students duly enrolled by the University Graduate Committee in these courses can be granted graduate credits only upon performing extra work.

Courses 200 to 300 are primarily for graduate students. Fourth year students of unusual ability may take these courses with the previous consent of the Department Head and the Dean, and receive credits therefor for the Bachelor's degree.

Year courses are subject to the following rules:

1. A student who receives a 5 for the first semester's work can not register for the second semester's work;

2. A student who receives a 4 in the first semester can continue the course and upon passing, receive credits for the whole course, the passing mark in the second semester being understood as wiping out automatically the 4 given in the first semester;

3. A student who receives 4's in both semesters must repeat the second semester's work within one year, but he must first pass a removal examination corresponding to the first semester before enrolling in the second semester for the second time. Failure to pass either the removal examination or the repeated second semester means the repetition of the whole course.

4. A student who passes the first semester's work but gets a 5 in the second semester must repeat the second semester's work within a year.

5. In order to receive credit, a student must complete a year course within two years; otherwise he has to repeat the first semester's work before he can take the second semester.

DEPARTMENT OF ANTHROPOLOGY AND SOCIOLOGY

Professor and Head, H. OTLEY BEYER; Assistant Professors, S. E. MACARAIG and MARCELO TANGCO.

The courses of study in the Department of Anthropology and Sociology are designed to offer a broad foundation for advanced work in all subjects dealing with human society and the development of civilization (such as History, Political Science, Economics and Commerce, Philology, Literature and the Drama, Aesthetic Art, Religion, Philosophy, and Psychology); as well as a basic training preparatory to the professional study

of Law and Government, Education, and Business Administration. Certain courses are also of special value in connection with the professional study of Medicine, Public Welfare Work, Military Science, etc.

Graduate study is also offered leading to the degrees of Master of Arts or Master of Science, depending upon whether the candidate's major specialty is Sociology, Ethnology, Physical Anthropology, or Criminology. Students who wish to specialize in any of the foregoing subjects should consult with the Head of the Department before preparing their program.

For those who wish to take work in this Department merely as part of a general culture course the following subjects are particularly recommended: Anthropology 1, 105, 106, and Sociology 11, 101, 102, 103.

Courses dealing especially with the Philippine and other Oriental Peoples are: Anthropology 3, 101, 102, 107, 116, 117, 201 to 204.

ANTHROPOLOGY

PRIMARILY FOR UNDERGRADUATES

Anthropology 1; *GENERAL ANTHROPOLOGY*.—A general introductory course for students wishing to obtain a general knowledge of the whole field of Anthropology. An outline is given of the physical characters of man and his division into races and varieties. Man's origin and distribution from geological to historical time is considered, together with a general review of the archaeology of the world in the Stone and Metal Ages. A brief study is made of the utilitarian and aesthetic arts, the sociology, the religious beliefs, and the languages of primitive peoples. A rapid review is made of the general field of ethnography. The collections in the ethnographical section of the Philippine Museum are used for purposes of illustration.

Textbook: Tanco, Notes on Anthropology.

3 hours a week (Class); either semester, credit 3 units.

Anthropology 3; *PHILIPPINE ETHNOGRAPHY*.—Description of the existing Philippine peoples, and a discussion of the theories as to their origin and development. Lectures and outside reading. May be taken as required Group IV subject by all students in first-year General Course.

3 hours a week (Class); first semester, credit 3 units.

FOR BOTH GRADUATES AND UNDERGRADUATES

Anthropology 101; *ARCHAEOLOGY OF MALAYSIA*.—A general study of the remains of past civilization in Indo-China, Sumatra, Java, Celebes, Borneo, and the Philippines; together with a review of the history of this region prior to European contact, and a special study of the eastward spread of South Indian civilization.

3 hours a week; first semester, credit 3 units.

Anthropology 102; *ETHNOGRAPHY OF EASTERN ASIA AND OCEANIA*.—Discussion of theories regarding the peopling of Asia and Oceania, and a general survey of the ethnography of these regions. Particular attention is paid to southeastern Asia and Malaysia. Lectures

and outside reading. Anthropology 1 should either precede or accompany this course, though not rigidly required as a prerequisite.

3 hours a week (Class); second semester, credit 3 units.

Anthropology 105; *ECONOMIC DEVELOPMENT OF MANKIND*.—Discovery; the origin of invention; and the general development of primitive economics. Lectures, outside reading, and study of collection in the Philippine Museum.

3 hours a week (Class); first semester, credit 3 units.

Anthropology 106; *SOCIAL ANTHROPOLOGY*.—A general study of the social and mental development of mankind, with special reference to the early history of such institutions as marriage, the family, government and law, and the development of beliefs.

3 hours a week (Class); second semester, credit 3 units.

Anthropology 107; *SOCIAL AND ECONOMIC LIFE OF THE PHILIPPINE MOUNTAIN PEOPLES*.—A series of lectures on the life and culture of typical local groups among the Negritos, the Mindanao pagans, and the terrace-building peoples of the Mountain Province.

3 hours a week (Class); first semester, credit 3 units.

Anthropology 108; *PHYSICAL ANTHROPOLOGY*.¹—This course is specially desirable for students preparing for the College of Medicine and is necessary as preparation for professional work in Anthropology. The work consists of lectures and laboratory periods. The lectures consider: Comparative anatomy of man and anthropoids, growth, heredity, miscegenation, sexual selection, eugenics, environment, acclimatization, physiological peculiarities and physical criteria of race, methods. In the laboratory the student is made acquainted with anthropometrical methods employed in the study of racial groups and the measurements used in ethnographical investigations and in the identification of criminals. Opportunity is afforded for work in the osteological collection of the Department, which consists of suitable material for the study of racial, sexual and individual variation. Required second semester, third year combined Liberal Arts-Medicine course.

Prerequisite: Anthropology 1 or Zoölogy 1.

4 hours a week (2 lectures, 2 laboratory); one semester, credit 3 units.

Anthropology 109; *CRIMINAL ANTHROPOLOGY AND RACE MIXTURE*.—The first half of the course deals with applied physical anthropology. In this the anatomical, physiological, and psychic peculiarities of the criminal are examined and interpreted according to the laws of heredity. Methods of identifying criminals are discussed and demonstrated. The second half of the course deals with the nature and visible effects of race mixture. The inheritance of physical characters in hybrid peoples is considered in detail. Questions of race dominance, fertility of

¹ This course belongs to Group III (Natural Science Group) and can be taken for the fulfillment of science requirements.

hybrids, environmental influences and degeneration are discussed. Special attention is paid to working out Mendelian principles in the family of mixed descent.

Prerequisite: Anthropology 1.

3 hours a week; one semester, credit 3 units.

Anthropology 115; *MUSEUM METHODS*.—This course is intended as a partial preparation for students who desire to enter museum work.

Two lectures and two hours work per week at the Philippine Museum (ethnographical section).

4 hours a week (2 lab, 2 Class); either semester, credit 3 units.

Anthropology 116; *PHILIPPINE FOLKLORE*.—A general study of Philippine myths and folk tales, and of their significance. Lectures, reading, and original work. (Identical with English 116.)

3 hours a week (Class); first semester, credit 3 units.

Anthropology 117; *FOLKLORE OF EASTERN ASIA AND OCEANIA*.—A study of the myth, fables, and legends of southern and eastern Asia and the Oceanic Islands, and their bearing on the problems of Oceanic ethnology. Lectures and outside reading. (Identical with English 117.)

3 hours a week (Class); second semester, credit 3 units.

PRIMARILY FOR GRADUATES

Anthropology 201; *SPECIAL PROBLEMS IN PHILIPPINE AND OCEANIC ANTHROPOLOGY*.—Original research by the student under direction of the instructor.

5 hours a week (Class); either semester, credit 5 units.

Anthropology 202; *SPECIAL PROBLEMS IN ASIATIC ANTHROPOLOGY*.—Original research by the students under direction of the instructor. The courses in Anthropology 201 and 202 are open to advanced students who possess a reading knowledge of Spanish. Either of these courses may be extended throughout the year.

5 hours a week (Class); either semester, credit 5 units.

Anthropology 203; *RACIAL ANATOMY OF THE PHILIPPINE PEOPLES*.—Research under direction of the instructor. Prerequisites, Anthropology 1, or 3, and Zoölogy 1. Courses in Anatomy at the College of Medicine are also recommended.

3 hours a week (Class); second semester, credit 3 units.

Anthropology 204; *PHILIPPINE ARCHAEOLOGY*. (By arrangement.)

Anthropology 205; *RESEARCH IN CRIMINAL ANTHROPOLOGY*. (By arrangement.)

Anthropology or Sociology 300.—*MASTER'S THESIS*. Subjects, must be approved by the Head of the Department and will be accepted for the present only in the fields of physical and social anthropology, archaeology, and ethnology.

SOCIOLOGY

Sociology 11 (Soc. 11); *ELEMENTARY SOCIOLOGY*.—An orientation course in the field of Sociology. The nature and scope of Sociology; social forces; social processes and social problems with application to local social conditions.

3 hours a week; first or second semester; credit 3 units.

Sociology 101 (Soc. 101); *GENERAL SOCIOLOGY*.—This course is designed to introduce the student into the study of the principles underlying social problems in all kinds of society. (Replaces former Soc. 1.)

3 hours a week; first or second semester; credit 3 units.

Sociology 102 (Soc. 102); *SOCIAL MOBILITY*.—A study of historical and modern stratified societies; the social effects of stratification; the causes of the break-up of stratification; social mobility; results of social mobility. Prerequisite Sociology 11.

3 hours a week; second semester; credit 3 units.

Sociology 103 (Soc. 103); *SOCIAL PSYCHOLOGY*.—A study of the fundamental mechanism of the mind of the crowd, the public and related groups, e. g., religious and political sects, and political parties.

3 hours a week; first semester; credit 3 units.

Sociology 104 (Soc. 104); *RURAL SOCIOLOGY*.—A study of Philippine barrio life and means of improving living conditions among the farming population.

3 hours a week; second semester; credit 3 units.

Sociology 105 (Soc. 105); *CRIMINOLOGY*.—History of criminology. The first part of the course discusses the nature and causes of crime. The second part is devoted to the study of programs for the social treatment of crime.

3 hours a week; second semester; credit 3 units.

Sociology 106 (Soc. 106); *CHARITIES*.—A brief survey of the history of philanthropy; the administration and control of charities, public and private; and the suggestion of constructive methods for the relief of the poor and defectives.

3 hours a week; second semester; credit 3 units.

DEPARTMENT OF BOTANY

Associate Professor and Head, JOSÉ K. SANTOS; Associate Professors, JOAQUIN MARAÑON, EDUARDO QUISUMBING; Instructors, MARIA D. PASTRANA, EUGENIA INCO-CAPARRAS, MARIA TOLENTINO-VALLARTA, JUAN T. PASCASIO,¹ GREGORIO T. VELASQUEZ; Assistants, PETRONILA MARASIGAN, TRINIDAD VILLEGAS, MARIANO ABAGON, and JOSÉ V. SANTOS.

Botany 1; *ELEMENTARY BOTANY*.—Laboratory work, lectures and recitations covering the essentials of elementary botany including the

¹ On leave.

morphology and physiology of seed plants, a general survey of the great group of plants, and subjects of general interest such as heredity. This course is required of students who are taking the pre-medical course.

Textbooks: Brown, *A Textbook of General Botany*; Brown, *Laboratory Botany*.

9 hours a week (6 Lab., 3 Class); one semester course (first or second semester), credits 5 units.

Botany 2; *MORPHOLOGY AND CLASSIFICATION OF PLANTS*.—The course is designed for beginning students in botany. The work in the first semester is a general course in the morphology and physiology of seed plants, and in the second semester, the morphology and classification of lower plants, and the classification of the flowering plants. Lectures and laboratory work will be supplemented by study in the field and in the herbarium; each student will be required to prepare a small herbarium. The chief object of the course is to give students a broad conception of the morphology, histology, and classification of plants. It is especially suitable for students desiring a preparation for the study of plant products and is required of first year pharmacy students as the basis for the study of pharmacognosy.

Textbooks: Brown, *A Textbook of General Botany*; Brown, *Laboratory Botany*.

9 hours a week (6 Lab., 3 Class); throughout the year, credit 10 units.

Botany 4; *TEACHERS' COURSE IN BOTANY*.—A beginning course designed primarily for those students in the College of Education who plan to become teachers of biology. During the first semester the general morphology and physiology of plants will be considered. The laboratory work will be largely experimental. During the second semester the subjects studied will include reproduction and heredity; the morphology, classification, and origin of the different groups of plants; disease-producing organisms; and Philippine vegetation. Special attention will be given throughout the course to the collection of materials for laboratory work and the selection of illustrative materials from the local flora.

Textbooks: Brown, *A Textbook of General Botany*; Brown, *Laboratory Botany*; Merril, *A Flora of Manila*.

9 hours a week (6 Lab., 3Class); throughout the year, credit, 10 units.

Botany 6; *GENERAL BOTANY*.—A lecture and demonstration course designed to cover the general subject of botany for those students who are not required to take other courses in botany, but who wish to gain some knowledge of the subject in relation to a general education. No previous work in botany or biology is required. The subject considered will include the general morphology and physiology of plants; reproduction, breeding, disease-producing organisms; and the morphology, classification,

origin of the different groups of plants, Philippine vegetation, and Philippine economic plant products.

Textbook: Brown, A Textbook of General Botany.

9 hours a week (6 Lab., 3 Class); throughout the year, credit 10 units.

Botany 7; *PHARMACOGNOSY*.—A study of the crude vegetable drugs official and non-official in the United States Pharmacopoeia. The laboratory work will cover the gross and microscopical characters of drugs and include some study of powdered drugs. Identification will receive careful attention and there will be frequent tests of ability to determine drugs. Lectures, recitations, and tests will cover the main facts of the pharmacography of each drug. The roots, rhizomes, barks, and leaves will be taken up in this semester.

Textbooks: Kramer, Scientific and Applied Pharmacognosy; Sayre, Organic Materia Medica and Pharmacognosy; or Santos, An Outline in Pharmacognosy. Prerequisite: Botany 2.

9 hours a week (6 Lab., 3 Class); first semester, credit 5 units.

Botany 8; *PHARMACOGNOSY*.—A continuation of the preceding course dealing with the flowers, fruits, seeds, and miscellaneous vegetable and animal drugs official and non-official in the United States Pharmacopoeia. Prerequisite: Botany 7.

9 hours a week (6 Lab., 3 Class); second semester, credit 5 units.

Botany 11; *HOME ECONOMICS BOTANY*.—An elementary course in botany designed to teach those phases of the subject which besides their cultural value will be useful in the home or which are important as an introduction to advanced home economics subjects such as food, clothing, bacteriology, and sanitation.

9 hours a week (6 Lab., 3 Class); first semester, credit 5 units.

Botany 12; *ECONOMIC PHILIPPINE BOTANY*.—This course deals with the economic plants and plant products of the Philippines. Stress will be laid on the forest and natural resources and on the possibilities for the development of new agricultural industries. The products to be discussed will include wood, wood products, food, fibers, paper pulp, oils, gums, resins, tanbark, bamboos, and ornamental and medicinal plants.

3 hours a week (Class); one semester, credit 3 units.

Botany 101; *EVOLUTION AND HEREDITY*.—A lecture course on evolution and heredity as applied to plants and animals. In the latter part of the course, the economic and sociological aspects of the subject will be considered. Prerequisite: A general course in Botany or Zoölogy.

9 hours a week (6 Lab., 3 Class); one semester, credit 5 units.

Botany 103; *ELEMENTARY PLANT PHYSIOLOGY*.—Laboratory and field work on the physiology of plants. Open to students who have had Botany 1, 2 or 4.

Textbook: Palladin-Livingston, Plant Physiology.

9 hours a week (6 Lab., 3 Class); one semester, credit 5 units.

Botany 113; *PLANT DISEASES*.—The fungous and bacterial diseases of cultivated plants and the means of checking them. Prerequisite: Botany, 1, 2 or 4.

9 hours a week (6 Lab., 3 Class); one semester, credit 5 units.

Botany 117; *PLANT CHEMISTRY*.—A didactic and laboratory course. The lectures consist of a general survey of the different plants constituents from the biochemical viewpoint. Their occurrence, physical and chemical properties, and the principles involved in the test for identification are considered. The laboratory work comprises the study of methods for plant analysis including the isolation and identification of the different organic compounds elaborated by the plant. Prerequisites: Inorganic and Organic Chemistry, and General Botany.

7 hours a week (6 Lab., 1 Class); throughout the year, credit 6 units.

Botany 118; *ORGANIC EVOLUTION*.—A lecture course designed to cover the general principles and theories of organic evolution.

3 hours a week (Class); one semester, credit 3 units.

Botany 119; *HEREDITY*.—A lecture course designed to cover the laws and applications of heredity.

3 hours a week (Class); one semester, credit 3 units.

Botany 210; *VEGETABLE HISTOLOGY*.—A systematic study of the tissues of vascular plants with particular emphasis on the method used in studying plant morphology. This course is designed primarily as an advanced course for students desiring to teach botany. Special attention will be given to developing the power of observation, and to the preparation of specimens, and the making of illustrations. Prerequisite: Botany 1, 2 or 4.

12 hours a week (Lab. with occasional lectures); throughout the year, credit 5 units each semester.

Botany 211; *VEGETABLE PHYSIOLOGY*.—An advanced course of lecture and laboratory work on the physiology of plants. Prerequisite: Botany 103.

9 hours a week (6 Lab., 3 Class); throughout the year, credit 5 units each semester.

Botany 214; *MORPHOLOGY AND REPRODUCTION OF PLANTS*.—An advanced course in the structure and reproduction of the Algae, Fungi, Musci, Pteridophytes, and Spermatophytes. Prerequisite: Botany 1, 2 or 4.

Throughout the year, credit 5 units each semester.

Botany 215; *ECOLOGY*.—A course in plant geography to include the study of plant formations and the factors which are responsible for the distribution of different types of vegetation. This is a vacation course to be given at some base from which a series of diverse plant formation may be reached. Prerequisite: Botany 1, 2 or 4. Credit 6 units.

Botany 216; *SYSTEMATIC BOTANY*.—A course in the classification of flowering plants. Prerequisite: Botany 1, 2 or 4.

Throughout the year, credit 10 units.

Botany 300; *MASTER'S THESIS*.—Special botanical problems.

DEPARTMENT OF CHEMISTRY

Professor and Head, AMANDO CLEMENTE; Professor JOSE I. DEL ROSARIO; Associate Professor FRANCISCO QUISUMBING; Assistant Professors, PILAR P. HERRERA, LUIS GONZAGA, SOFRONIO BALCE, DIONISIO M. BIROSEL; Instructors, ANTONIO G. SANTOS, MARIA VILLACORTE; Assistant Instructors, ADELAIDA ORETA, JOSEFA G. DEL MUNDO,¹ NATALIA J. SISON, ADELAIDA M. BENDAÑA,¹ CONSORCIA PANGANIBAN, LORETO C. REYES, ROSARIO MENDOZA, ANTONIO RODRIGUEZ, and FLORENCIO MEDINA.

The Department of Chemistry occupies the Freer Chemical Laboratory and the adjacent building, the Freer Annex.

The courses of study are designed primarily to meet the necessary requirements of students in the various colleges of the University. For students desiring to specialize in chemistry, the course leading to the degree of B.S.Chem. or to B.S. degree with chemistry as the major subject, offers the following prospects:

(a) Graduate study in the University of the Philippines or foreign universities.

(b) Junior technical positions in technical laboratories like the Bureau of Science.

(c) Junior teaching positions in college or in private schools.

The general curriculum leading to the degree of B. S. in Chemistry will be found on the preceding pages of this catalogue.

Graduate study is offered leading to the degree of Master of Science. To obtain this degree the student must complete, besides a certain number of formal courses, an experimental dissertation on some problems approved by the Head of the Department and the committee on Graduate study. Usually the degree may be obtained in about one year, though some problems may, perhaps, require a longer period.

PRIMARILY FOR UNDERGRADUATES

Chemistry 21; *CULTURAL CHEMISTRY*.—A general introductory course. Primarily for students taking general cultural courses, Education and Health Education.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); either semester, credit 5 units.

Chemistry 22; *CHEMISTRY FOR HOME ECONOMICS STUDENTS*.—A course designed primarily for students of home economics.

¹ On Leave.

Lectures, recitations, and laboratory work. (Cannot be offered in lieu of Chem. 23, 24, or 25.)

9 hours a week (3 Class, 6 Lab.); throughout the year, credit 10 units.

Chemistry 23; *GENERAL AND INORGANIC CHEMISTRY*.—A course giving the essentials of general inorganic college chemistry. Both the fundamental principles of the subject and the practical application to the industries and every day life are emphasized.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); throughout the year, credit 10 units.

Section:	Lecture:	Laboratory:
A	— 10 to 11 — T. Th. S.	7 to 10 — M. W.
B	— 8 to 9 — T. Th. S.	7 to 9 — M. W. F.
C	— 10 to 11 — T. Th. S.	7 to 10 — T. Th.
D	— 10 to 11 — T. Th. S.	1 to 4 — T. Th.
E	— 8 to 9 — T. Th. S.	1 to 4 — M. W.
F	— 8 to 9 — T. Th. S.	1 to 4 — T. Th.

Chemistry 24; *GENERAL AND INORGANIC CHEMISTRY* (For Pharmacy).—A course similar to 23, designed primarily for pharmacy students.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); throughout the year, credit 10 units.

Section:	Lecture:	Laboratory:
A	— 8 to 9 — M. W. F.	9 to 12 — M. W.
B	— 8 to 9 — M. W. F.	8 to 11 — T. Th.

Chemistry 25; *GENERAL AND INORGANIC CHEMISTRY*.—A course similar to 23, designed primarily for engineering students. Special attention is given to the chemistry of metals and construction materials. The latter part of the course is devoted exclusively to a brief course in qualitative inorganic analysis.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); throughout the year, credit 10 units.

Section:	Lecture:	Laboratory:
A	— 9 to 10 — M. W. F.	1 to 4 — M. W.
B	— 9 to 10 — M. W. F.	1 to 4 — T. Th.
C	— 9 to 10 — M. W. F.	7 to 9 — M. W. F.
D	— 9 to 10 — M. W. F.	7 to 10 — T. Th.

Chemistry 26; *ORGANIC CHEMISTRY* (Chemistry of Carbon Compounds).—An introductory course giving the theoretical principles and practical applications of synthetic organic chemistry. The general relations between different groups of compounds, the application of general

reactions and the laboratory preparation and general behavior of compounds characteristic of each group, are emphasized.

Prerequisites: Chemistry 23, 24, or 25.

Lectures, recitations, and laboratory work.

9 hours, a week (3 Class, 6 Lab); throughout the year, credit 10 units.

Section:	Lecture:	Laboratory:
A — 10 to 11 — M. W. F.		7 to 10 — M, W.
B — 10 to 11 — M. W. F.		1 to 4 — M. W.

Chemistry 27; *QUALITATIVE INORGANIC ANALYSIS*.—A systematic qualitative analysis of basic and acidic constituents of Compounds with drill in the analysis of mixtures minerals and alloys (unknowns) the composition of which is unknown to the student. Each unknown is considered a practical examination. A course designed primarily for chemistry, premedical and pharmacy students.

Prerequisite: Chemistry 23, 24, or 25.

9 hours a week (3 Class, 6 Lab.); first semester, credit 5 units.

Section:	Lecture:	Laboratory:
A — 7 to 8 — T. Th. S.		8 to 10 — T. Th. S.
B — 7 to 8 — T. Th. S.		1 to 4 — T. Th.

Chemistry 28; *QUANTITATIVE INORGANIC ANALYSIS* (Volumetric and Gravimetric).—The theory and practice of volumetric and gravimetric analysis, chiefly the analysis of simple salts, minerals, and alloys. Special emphasis is laid upon the chemical calculations of standard solutions, oxidation reactions, iodimetry, etc.

Prerequisites: Chemistry (23, 24 or 25) and 27.

Lectures, recitations, and laboratory work.

Lectures: T-Th-S—7 to 8.

Laboratory: T-Th-S—8 to 10.

9 hours a week (3 Class, 6 Lab.); second semester, credit 5 units.

Chemistry 29; *ELEMENTARY PHYSICAL CHEMISTRY*.—A course devoted to the elementary study of the fundamental laws and properties of liquids and gases. Special attention is given to the essentials of electrochemistry, thermo-chemistry, and chemical dynamics.

Prerequisites: Chemistry 27, and 28, Math. 17 and 18.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); first semester, credit 5 units.

Chemistry 31; *ELEMENTARY ORGANIC CHEMISTRY*.—A brief survey of Organic Chemistry with emphasis on the more important compounds in the aliphatic and aromatic series.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); second semester, credit 5 units.

Chemistry 32; *CHEMISTRY OF FOOD AND NUTRITION*.—A brief survey of the Chemistry of Food and Nutrition.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); second semester, credit 5 units.

FOR BOTH UNDERGRADUATES AND GRADUATES

Chemistry 101; *HISTORICAL CHEMISTRY*.—Historical study of the development of chemical theories from the time of the ancients to the present. Reviews and reports on literature topics.

Prerequisites: Chemistry (23, 24, or 25), 27, and 28.

Lectures and recitations.

2 hours a week; one semester, credit 2 units.

Chemistry 102; *TECHNICAL ANALYSIS* (Applied Analytical Chemistry).—A course in the analysis of ores, water, mineral oils, soils, cement, gas, etc.

Prerequisites: Chemistry (23, 24, or 25), 27, and 28.

Lectures, recitations, and laboratory work.

9 hours a week (2 Class, 7 Lab.); 2 semesters, credit 4 units a semester.

Chemistry 103; *FOOD ANALYSIS*.—A course in the analysis of foods such as milk, butter, cheese, coffee, chocolate, sugar (Polariscope, Fehling's and Clerget's method), cereals, etc.

Prerequisite: Chemistry 28.

Lectures, recitations and laboratory work.

9 hours a week (2 Class, 7 Lab.); either semester, credit 4 units.

Chemistry 104; *CHEMISTRY OF VEGETABLE FATS AND OILS*.—Determination of oil constants and special methods of investigation. Philippine agricultural and forest products may be studied if desired.

Prerequisites: Chemistry 26, and 28.

Lectures, recitations, and laboratory work.

9 hours a week (2 Class, 7 Lab.); first semester, credit 4 units.

Chemistry 105; *ADVANCED ORGANIC CHEMISTRY* (Analytic).—Ultimate organic analysis, qualitative, and quantitative; study of methods for detecting and estimating the different elements and groups in organic compounds.

Prerequisites: Chemistry 26, and 28.

Lectures, recitations, and laboratory work.

9 hours a week (2 Class, 7 Lab.); first semester, credit 4 units.

Chemistry 106; *ADVANCED ORGANIC CHEMISTRY* (Synthetic).—Advanced organic synthesis and special training in organic laboratory technique.

Prerequisites: Chemistry 26, 28 and 105.

Lectures, recitations, and laboratory work.

9 hours a week (2 Class, 7 Lab.); first semester, credit 4 units.

Chemistry 107; *ADVANCED PHYSICAL CHEMISTRY*.—A detailed study of the various branches of physical chemistry. Emphasis is laid upon theories and practical applications.

Prerequisites: Chemistry 29; Physics 109 and 110.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); two semesters. Elective, credit 5 units each semester.

Chemistry 109; *SPECTRAL ANALYSIS*.—Identification of substances by means of the wave length, Spectrometer, and Spectrograph.

Lectures, recitations, and laboratory work.

6 hours a week (2 Class, 4 Lab.); credit 4 units.

Chemistry 110; *ELEMENTARY PHOTOCHEMISTRY*.—A course covering the fundamental laws governing the relations between matter and radiation. Special attention is given to the Spectral Theory, Photosynthesis, Spectrography, Photography, etc.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); credit 5 units.

Chemistry 111; *CONTEMPORARY CHEMICAL LITERATURE*.—Reports and discussions on scientific articles relating to Chemistry. Special emphasis will be given to original articles in French and German to give the students the much needed practice on the scientific usages in these languages.

2 hours a week, credit 2 units.

Chemistry 117; *INDUSTRIAL CHEMISTRY*.—Lectures on Modern Factory operations, Sanitation, Water Supply, Fuels, Industrial Alcohol, Acids, Alkalies, Electrochemical and Metallurgical Industries; Cement, Sugar, and Cellulose Industries, Dehydrated, Evaporated and Condensed Foods. Special attention is given to Philippine Industries and literature reviews on Philippine industrial researches.

Factory inspections in Manila and vicinity.

3 hours a week; one semester, credit 3 units.

Chemistry 118; *INDUSTRIAL CHEMISTRY*.—A laboratory course in industrial processes, to supplement Chemistry 117.

9 hours a week; one semester, credit 3 units.

PRIMARILY FOR GRADUATES

Elective courses given primarily for graduate students.

Courses 201 to 206 will not be given regularly each year, but only at intervals. Special announcements will be issued each year. Students desiring to take any of these courses should make formal application to the Head of the Department at least one year in advance. General prerequisites are Chemistry (23, 24 or 25), 26, 27, 28, and 29.

Chemistry 201; *PHOTO-CHEMISTRY*.—Energetics of radiation; statics; kinetics and dynamics of photochemical change, etc.

Prerequisite: Physics 110.

Lectures and recitations.

3 hours a week; one semester, credit 3 units.

Chemistry 202; *COLLOID CHEMISTRY*.—General properties of colloids; methods of preparation and practical applications of colloid chemistry.

Special prerequisites: Physics 3 and 4.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); one semester, credit 5 units.

Chemistry 203; *CHEMICAL THERMO-DYNAMICS*.—Consideration of thermo-dynamic principles. Chemical equilibrium in homogeneous and heterogeneous systems from the thermo-dynamic standpoint.

Prerequisites: Physics 110, Chem. 29, and Math. 105.

Lectures and recitations.

3 hours a week; one semester, credit 3 units.

Chemistry 204; *CHEMICAL MICROSCOPY*.—Microchemical methods and tests.

Lectures, recitations, and laboratory work.

8 hours a week (2 Class, 6 Lab.); one semester, credit 4 units.

Chemistry 207; *THE TEACHING OF CHEMISTRY*.—Lectures and conferences on the teaching of science with particular reference to chemistry. A course designed specially for prospective teachers in chemistry.

Lectures and recitations.

1 hour a week; one semester, credit 1 unit.

Chemistry 209; *ADVANCED QUALITATIVE ANALYSIS*.—With special reference to the identification of rare elements.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); two semesters. Elective, credit 5 units each semester.

Chemistry, 210; *QUANTITATIVE MICRO-ANALYSIS*.—This course consists of Quantitative Micro-Chemical Analysis.

Lectures, recitations, and laboratory work.

9 hours a week; two semesters. Elective, credit 5 units each semester.

Chemistry 230; *SELECTED TOPICS IN GENERAL AND INORGANIC CHEMISTRY*.—This course presents special subject of general and inorganic chemistry such as Indicators, Werner's Theory, Theory of Ionization, Non-aqueous Solutions, etc.

Lectures, and recitations.

3 hours a week; one semester, credit 3 units.

Chemistry 231; *INORGANIC PREPARATION*.—A laboratory course which involves the study of chemical reactions and principles as they apply to the preparation of interesting compounds not usually taken in detail in elementary courses in organic chemistry.

9 hours a week; one semester, credit 3 units.

RESEARCH

Chemistry 300; *CHEMICAL RESEARCH*.—These courses shall consist of special topics, including 20 to 30 hours per week of laboratory work,

under the special direction of an adviser chosen from the staff of the Department of Chemistry. Students desiring to pursue research work in Industrial, Physical, Analytical, or Organic Chemistry may obtain problems for investigation along these lines.

The time devoted to a chemical research will naturally depend upon the kind of problem selected. If the student can devote a minimum of eighteen hours each week to this research and no unusual difficulties arise an ordinary problem may be finished in about two semesters' work.

Students who expect to study for the Master's degree should apply a year in advance so that there will be sufficient time to obtain the equipment and materials necessary for the research.

A credit of ten units is allowed for dissertation which has been completed, approved by the adviser and accepted by the Graduate Committee.

DEPARTMENT OF ECONOMICS

See School of Business Administration in subsequent pages.

DEPARTMENT OF ENGLISH

Professor ROBERT J. CONKLIN (Head); Associate Professors: VERNE DYSON, C. JAMIAS,¹ A. VITERBO, E. THOMAS, ASSISTANT Professors: P. M. BENITEZ, V. M. HILARIO, M. AGONCILLO, W. O. PABLO, E. M. VALENZUELA, J. O. MARQUARDT, E. P. EDMUNDS, Instructors: J. VALENZUELA, P. P. MENDEZ, R. MACK, JEAN EDADES, PLATON CALLANGAN, I. MANLAPAZ.

Students majoring in English are expected to take English 1, 8, 11, 12, 107, 122, 123, and at least one of 119, 120, and 121. Their further choice will be guided by their preference for literature or writing.

Students majoring in journalism should take English 1, 8, 9, 11, 12, 106, 108, 110, and such other courses in writing and literature as time permits.

COURSES PRIMARILY FOR UNDERGRADUATES

English 1; *FRESHMAN COMPOSITION*.—This course deals with the fundamentals of correct English expression, and is designed to aid the student in forming correct language habits. Study of the principles of English composition, the writing and revision of original themes, and collateral reading form the content of the course, which is prerequisite to all other courses in English.

3 hours a week (Class); both semesters, credits 6 units.

English 4; *MYTHOLOGICAL BACKGROUNDS OF ENGLISH LITERATURE*.—A course designed to acquaint the student with Greek, Roman, German, and Norse mythology and folklore, particularly with reference to their use in English literature. All of the world Epics are briefly discussed, and selections from representative English poets from Chaucer to Tennyson are examined in class. Students taking the course are re-

¹ On leave.

quired to do a prescribed amount of outside reading. Primarily for English majors and minors.

Prerequisite: English 1.

3 hours a week (Class); either semester, credit 3 units.

English 7; *ENGLISH FOR ENGINEERS*.—This course is limited to students in the various fields of engineering. It is prescribed for Engineering sophomores.

The purpose of the course is to supply specialized instruction in the peculiar kind of expository writing which pertains to the general field of engineering. Practice in the writing of reports as well as of other special forms of exposition, constitute the method by which this purpose is realized.

Prerequisite: English 1.

2 hours a week (Class); either semester, credit 2 units.

English 8; *EXPOSITORY WRITING*.—This course takes up some of the principal types of Exposition, such as Expository Narrative and Description, the Explanation of a Process, Criticism and the Familiar Essay. In addition to study of a text, weekly theme writing and collateral reading are required.

Prerequisite: English 1.

3 hours a week (Class); either semester, credit 3 units.

English 9; *ARGUMENTATION*.—This is a course in the study and practice of the principles of Argumentation. The course includes brief writing and debate, both written and oral, based on a study of the first principles of logic, the kinds of evidence, etc.

Prerequisite: English 1. Normally preceded by English 8.

3 hours a week (Class); either semester, credit 3 units.

English 11; *SURVEY OF ENGLISH LITERATURE*.—Readings in the principal types of literatures as practiced by leading authors in the several periods of English literary development. This course covers epic poetry, narrative poetry, and lyric poetry down to Shelley. Prerequisite to courses 119 and higher, and to other courses as specified.

Prerequisite: English 1.

3 hours a week; first semester, credit 3 units.

English 12; *SURVEY OF ENGLISH LITERATURE*.—Readings in the principal types of literature as practiced by leading authors in the several periods of English literary development. This course covers lyric poetry from Shelly to the 20th century and the prose types of literature. Prerequisite to courses 119 and higher, and to other courses specified.

Prerequisite: English 1.

3 hours a week; second semester, credit 3 units.

Courses 104, 105, 106, 107, 110, 111, 119, 120, 121, 122, 123, and 124 are limited to juniors and seniors. Except 104, they may be taken for credit by a graduate student who has not taken them as an undergraduate, provided that he be required by the instructor to do extra work.

English 101; *PUBLIC SPEAKING*.—Study and practice of effective public speaking, with emphasis on composition; types of occasional addresses; devices of emphasis in oral composition. Class limit, twenty.

Prerequisites: English 1, 11, 12, and either 8 or 9.

3 hours a week (Class); first semester, credit 3 units.

English 102; *SPEECH WRITING*.—Continuation of 101. Study of the effective devices used in great English and American speeches. In addition to shorter talks, each student must compose and deliver two long speeches.

Prerequisites: English 101 and its prerequisites.

3 hours a week (Class); second semester, credit 3 units.

English 104; *FREE READING*.—A course aimed to encourage general reading outside the range of the usual courses in literature. Students electing this course will choose books from an extensive list, and will meet once a week in small discussion groups. Intended for juniors and seniors, especially for students not majoring in English.

Prerequisite: Two years of college work.

1 hour a week (Discussion); either semester, credit 1 unit.

English 105; *MASTERPIECES OF WORLD LITERATURE*.—Cultural and comparative study in translation of a few famous books which everyone should know. Intended for advanced students only.

Prerequisites: Two years of college work, or the completion of English 11 and 12.

3 hours a week (Class); both semesters or either semester, credit 6 or 3 units.

English 106; *ADVANCED RHETORIC*.—Advanced study of the forms and principles of writing, with practice in comparatively long themes. Several types of writing are attempted, in order to discover each student's special aptitude. This course is intended for students of ability, who are ambitious to develop some degree of literary competence.

Prerequisites: English 1, 11, 12, and either 8 or 9; the instructor may reject students obviously unfit, even though they have fulfilled the prerequisites.

3 hours a week (Class); either semester, credit 3 units.

English 107; *AMERICAN LITERATURE*.—A survey of American literature to the close of the Nineteenth Century. This course includes a study of every major writer, an analysis of his chief works, and a critical appreciation of his place and influence in American literature. Intensive reading will be required of students from leading writers of each period, with reports and quizzes thereon. This course is offered both as a general culture course and as preparation for teaching in the Philippine public schools.

Prerequisite: English 1.

3 hours a week (Class); either semester, credit 3 units.

English 108; *NEWS WRITING*.—A course designed to acquaint the student with the rudiments of newspaper reporting, and the ethics and

journalistic principles of the best newspapers. The course is a combination of lecture, recitation, and laboratory work. Students taking it are required to prepare weekly assignments of written work, and to do a considerable amount of outside reading.

Prerequisites: English 1, English 8 or 9, and one other writing course.
3 hours a week (Class); throughout the year, credit 6 units.

English 109; *ADVANCED NEWS WRITING*.—A continuation of English 108, intended primarily for students who have completed two semesters of English 108. Other advanced students may be admitted at the discretion of the instructor.

This course is organized upon the assumption that the student has acquired a working knowledge of the principles of Journalism; consequently the work will consist almost entirely of the writing of news and feature stories on assignment, and class periods will be devoted to editing and revision of copy. Qualified students will be encouraged to contribute material to local newspapers and magazines.

Prerequisites: English 1, English 8 or 9, English 108, and one other writing course.

3 hours a week (Class); either semester, credit 3 units.

English 111; *THE SHORT STORY*.—This course consists of practice in writing short stories; study of narrative principles in the short story, and consideration of the short story as a literary form. May be repeated for credit.

Prerequisites: English 1, 11, 12, and either 8 or 9.

3 hours a week (Class); either semester or both, credit 3 or 6 units.

English 114; *PLAY PRODUCTION*.—Study and production of plays, training in amateur acting, and directing, and a brief review of the origin of the drama in Greece, and its subsequent development in Rome, on the continent of Europe, and in England and America.

The instructor has the privilege of selecting students for enrollment on the basis of earnestness, talent, and previous training.

3 hours a week (Class); either semester, credit 3 units.

English 119 and 124 are intended to make students acquainted with the historical and literary developments of the respective periods, and with all writings of major significance. Intensive reading is supplemented by lectures. These courses are for general culture and for the preparation of prospective teachers of English.

English 119; *FROM THE NORMAN CONQUEST TO CHAUCER*.—This course takes up the work of the chief Middle English poets, including Chaucer. Students also read the folk ballads in considerable number.

Prerequisites: English 1, 11, and 12.

3 hours a week (Class); second semester, credit 3 units.

English 120; *WYATT TO MILTON*.—Elizabethan literature. Covers not only Elizabethan drama, poetry, and prose, but also the Caroline and

Jacobean periods. Essentially a lecture course. The textbook is supplemented by outside readings. Shakespeare is included, but only in historical perspective.

Prerequisites: English 1, 11, and 12.

3 hours a week (Class); first semester, credit 3 units.

English 121; *DRYDEN TO JOHNSON*.—Covers the periods from the Restoration to the Romantic Revival, with especial emphasis on the Augustan Age. A lecture course with intensive study of Pope and Fielding in texts, and supplementary readings in other authors.

Prerequisites: English 1, 11, and 12.

3 hours a week (Class); second semester, credit 3 units.

English 122; *WORDSWORTH TO SCOTT*.—The Romantic period. The course starts with a study of the eighteenth century phase of the movement, and traces the development of romanticism through Tomson and Burns. The greater part of the course, however, deals with the leading romantic writers between 1798 and 1830, including the revolutionary poets, and the romantic essayists and critics.

Prerequisites: English 1, 11, and 12.

3 hours a week (Class); first semester, credit 3 units.

English 123; *THE VICTORIANS*.—Intensive study of selections from more important Victorian writers, such as Carlyle, Ruskin, Arnold, Browning, and Tennyson; lectures on the above and the period as a whole; supplementary outside readings. Especially valuable to future teachers of English.

Prerequisites: English 1, 11, and 12.

3 hours a week (Class); second semester, credit 3 units.

English 124; *CONTEMPORARY WRITERS IN ENGLISH*.—Covers the principal writers of English and American literature in the 20th century. Designed to acquaint the student with significant literary movements of our own times.

Prerequisites: English 1, 11, and 12.

3 hours a week (Class); second semester, credit 3 units.

GRADUATE COURSES

The following courses are open to students who have completed an undergraduate major in English, and to especially well-qualified seniors. Regarding graduate credit in undergraduate courses, see note preceding the description of English 101.

English 201; *INTRODUCTION TO THE HISTORICAL STUDY OF LANGUAGE AND LITERATURE*.—An introduction to the history of the English language, the elementary principles of linguistic development, and the materials and methods of literary research. Lectures, weekly exercises in research problems, and assigned readings in standard works on the English language. Required of all graduate students at the beginning of their graduate course.

3 hours a week (Class or Seminar); first semester, credit 3 units.

English 202; *ENGLISH DRAMA TO 1642*.—A historical and critical study of the religious drama, the morality, the interlude, early comedy and tragedy, and the chief Tudor playwrights from Lily to Shirley, exclusive of Shakespeare. (See English 203.)

3 hours a week (Class); when announced; one semester, credit 3 units.

English 203; *SHAKESPEARE*.—A study of his life; intensive study of a few plays, and rapid reading of the others; introduction to some of the problems of Shakespearean criticism. Should be preceded by English 120, and, if possible, by English 202.

3 hours a week (Class); when announced; one semester, credit 3 units.

English 205; *THE ENGLISH NOVEL*.—Lectures, extensive readings, discussion, reports. Should be preceded by English 121 or English 123, or both.

3 hours a week (Class); when announced; one semester, credit 3 units.

English 206; *THE ENGLISH ESSAY*.—Lectures on its development; reading, discussion, report.

3 hours a week (Class); when announced; one semester, credit 3 units.

English 230; *GRADUATE RHETORIC*.—A course in the writing of original essays, stories, poems, or plays for students preparing for professional writing. Each student must submit eight or ten manuscripts. Special exercises in rhetorical theory.

Hours to be arranged. Either semester or both; credit 3 units.

English 300; *MASTER'S THESIS*.—Supervised original work in the investigation of literary and linguistic problems. Considerable latitude is permitted in the choice of problems, studies in Filipino languages and literatures being acceptable. Emphasis is placed upon correct methods of collecting and judging evidence and of arranging material. Required of all candidates for the M.A. degree.

Throughout the year; total credit, 10 units.

DEPARTMENT OF GEOLOGY AND GEOGRAPHY

Associate Professor and Head: Dr. JOSE M. FELICIANO; Assistant Professor: Dr. CORNELIO C. CRUZ; Professorial Lecturer: Dr. LEOPOLDO A. FAUSTINO; Assistant: Mr. JUAN S. TEVES.

PHYSIOGRAPHY 1.—The surface features of the earth, treated with special reference to their origin and significance; agencies affecting changes in the relief features; physiographic changes in progress as applied to the Philippines. The course includes a brief consideration of the elements of Meteorology and Oceanography. Occasional field trips on Saturdays. Lectures, recitations, references, and reports.

3 hours a week (Class); first semester, credit 3 units.

PHYSIOGRAPHY 2.—Continuation of Physiography 1.

3 hours a week (Class); second semester, credit 3 units.

Geology 1; *GENERAL GEOLOGY*.—A general course involving a study of geological processes with special emphasis on those which have been

important in the geological history of the Philippine Archipelago. Occasional field trips on Saturdays to train the students in the recognition and interpretation of geological phenomena.

Lectures, recitations, references, and reports.

3 hours a week (Class); first semester, credit 3 units.

GEOLOGY 2.—Continuation of Geology 1 and historical Geology.

3 hours a week (Class); second semester, credit 3 units.

Geology 13; *MINERAL RESOURCES.*—An elementary course including (1) a consideration of the mineral resources of the United States and the Philippine Islands, and of foreign deposits which contribute largely to our mineral supplies; (2) a study of their importance in the industrial life of the nations; some consideration is given to the geologic conditions under which deposits of economic value are found; (3) a brief study of the common minerals of economic importance; and (4) excursions to points of economic interest in and about Manila.

3 hours a week (Class), and occasional laboratory and field trips; first semester, credit 3 units.

Geology 103; *GENERAL GEOLOGY FOR ENGINEERING STUDENTS* (Prerequisite: Chemistry 25 or 27 or equivalents).—A general course covering general and economic geology and the elements of mineralogy. Lectures, laboratory work, recitations, and occasional field trips.

7 hours a week; either semester, credit 3 units.

Geology 105; *FIELD GEOLOGY* (Place will be announced later).—Problems in Physiography and stratigraphy, sedimentation, and intrusion. The work will continue for four weeks after which the report will be written. Prerequisite: Geology 1. Credit 3 units. Summer course.

Geology 115; *HISTORICAL GEOLOGY* (Prerequisite: Geology 1).

3 hours a week (Class); throughout the year, credit 6 units.

Geology 120; *PETROLEUM GEOLOGY.*—A course intended to familiarize the student with (1) the stratigraphy and structural conditions of producing oil and gas fields of the United States and the Philippine Islands; (2) the methods of work employed in investigating, producing, or prospecting oil fields; (3) the organization and presentation of field data in the form of reports. A brief description of the methods of oil production and control of wells will be included. Prerequisite: Geology 1.

3 hours a week (Class); first semester, credit 3 units.

Geology 121; *SYSTEMATIC PALEONTOLOGY AND TERTIARY CONCHOLOGY.*—A study of invertebrate fossils, their classification, and their geologic and geographic distribution with special emphasis on Philippine materials.

9 hours a week (Lectures, Recitations, and Laboratory); throughout the year, credit 10 units.

Geology 123; *MINERALOGY* (Prerequisite: Chemistry 25 or 27 or their equivalents).—Lecture and laboratory work. Includes a detailed

study of the chemical and physical properties of common rock-making minerals and some of the rarer minerals of economic importance; blowpipe analysis.

6 hours a week (Laboratory and Class); either semester, credit 3 units.

Geology 140; *PRINCIPLES OF STRUCTURAL AND DYNAMIC GEOLOGY*.—A study of the principles and theories of earth diastrophism and rock deformation. Rock structures, the mechanics of their origin, their interpretation, and their application to the solution of other geologic problems. Prerequisite: Geology 1; Descriptive Geometry.

3 hours a week (Class); second semester, credit 3 units.

Geology 193; *PHARMACEUTICAL MINERALOGY* (Prerequisites: Chemistry 24 and 27).—This course includes the elements of crystallography, detailed study of the physical and chemical properties, occurrences and uses, and determination of the more common minerals; with special emphasis to minerals and ores of metals used in pharmacy, including mineral waters.

7 hours a week (lectures, recitations, and laboratory), first semester; credit three (3) units. Elective for pharmacy students.

Geology 205; *ECONOMIC GEOLOGY* (Prerequisite: Geology 1 and 123).—The nature, occurrence, and origin of metalliferous deposits. Theories of ore deposition. Lectures, recitations, references, and reports.

3 hours a week; second semester, credit 3 units.

Geology 241; *OPTICAL MINERALOGY*.—Lecture and laboratory work. Includes a review of the principles of optics as applied to the petrographic microscope, the use of the microscope and other apparatus, and descriptions of rock-forming minerals, with a study of their associations and alterations. Prerequisite: Geology 103 or equivalents.

9 hours a week (Lecture, Class, and Laboratory); first semester, credit 5 units.

Geology 250; *RESEARCH IN ECONOMIC GEOLOGY*.—Research upon problems relating to metallic or non-metallic mineral deposits. May form the basis for dissertation. May be elected more than once to cover different researches. Prerequisites: Geology 140 and 205. Registration only after consultation with the instructor. Credit depends upon work done, but will not be more than 3 units per semester.

Geology or Geography 300; *MASTER'S THESIS FOR GEOLOGY OR GEOGRAPHY*.—Original investigation of various problems in Geology or Geography. This course will consist entirely of individual work in field and laboratory. Open to students who have majored in Geology or Geography. Two years of German or French are required.

15 hours a week; throughout the year, credit 10 units.

METEOROLOGY

Meteorology 11.—Intended to give the student a grasp of the causes at work determining the character of the weather; the changes of tem-

perature, pressure and winds, humidity, cloudiness, precipitation and storms. Weather forecasting.

3 hours a week, credit 3 units. First Semester.

Climatology 12.—In this course the student works with the original weather data from stations throughout the world, charting and interpreting them with a view to arriving at a logical division of the earth's surface into climatic realms. Sometime is devoted to the study of climate as a factor to plant, animal, and human ecology.

3 hours a week, credit 3 units. Second semester.

GEOGRAPHY

Geography 1; *ELEMENTS OF GEOGRAPHY*.—An introductory study of the relations between man and the elements of the natural environment. The course aims (1) to develop a clear conception of the environmental elements, such as climate, land forms, soils, surface and underground waters, mineral deposits, and (2) to bring out the important elementary adjustments which people make to these elements.

3 hours a week; either semester, credit 3 units.

Geography 101; *ECONOMIC GEOGRAPHY*.—A study of the major human adjustments to the natural environment which result from the effort to make a living. The course deals with the leading commercial products of farm, range, forest, mine, sea, and factory, and trade routes and centers. The course aims (1) to give the students a comprehensive survey of the principal industries of the world in their environmental setting, (2) to establish by concrete illustrations the principles set forth in Geography 1, and (3) to construct a framework of geographic adjustments throughout the world.

Prerequisite: Geography 1.

3 hours a week; second semester, credit 3 units.

Geography 102; *GEOGRAPHY OF THE PHILIPPINE ISLANDS*.—A survey of the principal economic activities of the Islands from the standpoint of their relation to natural environmental complex. Emphasis is placed on the study of the commercial relations of the Philippine Islands with other trade regions; the factors and problems in the development of Philippine trade; the shipping services; and the ports and port facilities.

Prerequisites: One year of college work and consent of instructor.

3 hours a week; either semester, credit 3 units.

Geography 103; *HISTORICAL GEOGRAPHY*.—The relations between earth conditions and earth resources, on the one hand, and the settlement and development of a country, on the other. The evolutionary adjustments of the people in a selected country whose past geography is under consideration with the natural environmental complex.

Prerequisite: One year of college work.

3 hours a week; one semester, credit 3 units.

Geography 104; *ECONOMIC GEOGRAPHY OF NORTH AMERICA*.—A survey of the principal economic activities in each of the major geographic

regions of North America from the standpoint of their relations to the natural environmental complex. Emphasis is placed on the regional equipment for industry in the several divisions of the continent.

Prerequisite: Geography 101.

3 hours a week; one semester, credit 3 units.

Geography 105; *THE NATURAL RESOURCES OF THE PHILIPPINES*.—A study of the lands, waters, forest, and mines of the Philippines as factors of national development. Particular attention is given to the methods of exploitation, their administration, and conservation. Lectures, readings, and discussions.

3 hours a week (Class); first semester, credit 3 units.

Geography 106; *HUMAN GEOGRAPHY*.—Principles of human geography. The distribution of mankind on the earth. Human establishments. Man as a geographical factor. The distribution of cultivated lands. Types of cultural landscapes in various parts of the world. Industrial landscapes. The settlement of an area.

Prerequisites: Geography 1, and consent of instructor.

3 hours a week; one semester, credit 3 units.

Geography 107; *GRAPHICS AND CARTOGRAPHY*.—The principles of graphic presentation of statistical material; the various devices used; the scale and media adapted to different purposes. The principles of cartography, the merits of the more important map projections, methods of preparation of maps, graphs, and photographs for reproduction.

9 hours a week, (6 Lab., 3 class) one semester, credit 5 units.

Geography 109; *OCEAN TRADE AND TRANSPORTATION*.—A survey of present-day overseas commerce and transportation and an analysis of the underlying geographic and economic principles. Major commercial divisions and trade regions of the world; ocean trade routes; the function and importance of ports and the distribution and importance of fuel stations; ocean carriers and their cargoes; the relation of fluctuations in the movements of commodities to ship management; the principal merchant marines of the world and their relation to the world's overseas trade.

Prerequisites: Geography 1 and 101.

3 hours a week; either semester.

Geography 201; *POLITICAL GEOGRAPHY*.—An inquiry into the relation between man's political activities and his natural environment. The political development of type states is viewed in the light of their location, size, climate, land forms, and natural resources. With this background the political organization of the world today is outlined in terms of contrasted environmental conditions. Current political issues are studied in so far as they portray changing adjustments to natural environment.

Prerequisites: Geography 1 and 101 or consent of instructor.

3 hours a week; one semester, credit 3 units.

Geography 202; *FIELD GEOGRAPHY*.—Training in methods of geographic field work for advanced students who have not had a field course in geography. (Place to be announced later on) Credit 5 units (One summer course).

DEPARTMENT OF HISTORY

Professor LEANDRO H. FERNANDEZ (Head); Associate Professor ENCARNACION ALZONA; Assistant Professors NICOLAS ZAFRA and PATERNO SANTOS; Instructors Mr. GABRIEL FABELLA, Mr. JOSE S. PIATOS, Mr. TOMAS S. FONACIER¹, and Mr. GREGORIO F. ZAIDE.

History 2; *MODERN AND CONTEMPORARY EUROPE, 1815-1924*.—This course will treat of the Congress of Vienna, the industrial revolution, the development of Italian and German unities, the intellectual achievements of the nineteenth century, modern social problems, imperialism in Africa and the Orient, and the World War.

Prescribed in the first year of the Preparatory Law Course.

3 hours a week; either semester, credit 3 units.

History 5; *PHILIPPINE HISTORY*.—Rapid survey of Philippine history with emphasis on the political, social, and economic progress of the Philippines during the nineteenth century. The introductory part of this course is devoted to a rapid survey of early Filipino civilization and Philippine conditions in the early years of Spanish rule, to be followed by a consideration of the outstanding incidents and developments of the eighteenth century. The remaining part takes up such matters as Philippine representation to the Spanish Cortes, opening of the Philippines to foreign countries, economic and political progress, the propaganda movement, and the outbreak of the Philippine Revolution.

Prescribed in the second year of the Preparatory Law Course.

3 hours a week; either semester, credit 3 units.

History 6; *ORIENTAL HISTORY*.—Brief survey of the modern history of India, China, Japan, Korea, etc., and their European associations.

3 hours a week; second semester, credit 3 units.

History 25; *UNITED STATES HISTORY, 1492-1929*.—A general survey of the history of the United States from the discovery to the present with particular emphasis on social, economic, and political conditions.

3 hours a week; first semester, credit 3 units.

History 101; *MODERN EUROPE, 1492-1815*.—This course will deal with the important political, economic, and intellectual achievements of the sixteenth, seventeenth, and eighteenth centuries. Due emphasis will be given to the various aspects of the "old régime," the French Revolution, and the era of Napoleon.

3 hours a week; first semester, credit 3 units.

History 103; *EUROPE AND THE GREAT WAR*.—Among the specific topics which will be discussed are the rise and the fall of the German Empire, imperialism and world politics in the nineteenth and twentieth centuries, and the World War.

3 hours a week; first semester, credit 3 units.

¹ On leave.

History 104; *PHILIPPINE HISTORY*.—From the earliest times to the establishment of the Spanish colonial government in the Philippines, with particular emphasis on the following topics: Pre-Spanish sources, the discovery, the exploration and conquest, the social, economic, and political conditions during the period of discovery and conquest, and the establishment of the Spanish government.

3 hours a week; first semester, credit 3 units.

History 107; *ANCIENT CIVILIZATION*.—A brief survey of the contributions of the ancient world to European civilization, the development of the political, social, and economic life of the Greek people, and the growth of the Roman system of government.

3 hours a week; first semester, credit 3 units.

History 108; *MEDIEVAL CIVILIZATION*.—A brief survey of the contribution of the Middle Ages to European civilization, the Feudal system, the Christian Church, the Holy Roman Empire, the rise of national states, the Renaissance, and the Reformation.

3 hours a week; second semester, credit 3 units.

History 109; *THE PHILIPPINE REVOLUTION*.—An intensive course based on primary sources, and supplemented by a few well-known secondary authorities.

Prerequisites: History 5 and reading knowledge of Spanish.

3 hours a week; second semester, credit 3 units.

History 111; *HISTORY OF EDUCATION IN THE PHILIPPINES*.—The evolution of educational practices and institutions in the Philippines. This course is identical with Education 10.

3 hours a week; second semester, credit 3 units.

History 127; *THE AMERICAN REVOLUTION*.—An intensive study of the colonists' struggle for political independence.

Prerequisite: History 25.

3 hours a week; first semester, credit 3 units.

History 128; *THE AMERICAN CIVIL WAR*.—An intensive study of the slave controversy, state sovereignty, and the constitutional and political aspects of the war.

Prerequisite: History 25.

3 hours a week; second semester, credit 3 units.

History 129; *AMERICA IN THE FAR EAST*.—An intensive study of America's expansion to the Far East, the acquisition of the Philippines, the "open-door doctrine," the Philippine question, and the various aspects of American-Japanese relations.

3 hours a week; first semester, credit 3 units.

History 130; *ANCIENT CIVILIZATION OF CHINA*.—A discussion of ancient Chinese institutions, religious, social, and political. The origin of Chinese classical literature, social customs, and political institutions, with particular reference to the great Chow Dynasty. The attempt is to

give the students the basic elements of Chinese civilization, and a background for a better understanding of modern China. Maps and charts are used to simplify the subject.

3 hours a week; first semester, credit 3 units.

History 131; *CONTEMPORARY CHINA*.—The Boxer Rebellion, the agitation for the constitution, the fall of the Manchus, the Republic, the Civil War, China's role in the European War, and present-day Chinese problems.

3 hours a week; second semester, credit 3 units.

History 132; *CONTEMPORARY JAPAN*.—The fall of the Shogunate, the rise of constitutionalism, the Chino-Japanese War, the acquisition of Formosa, the Anglo-Japanese Alliance, the Russo-Japanese War, the annexation of Korea, the Manchurian question, Japan in the European War, and present-day Japanese problems.

3 hours a week; second semester, credit 3 units.

History 133; *MODERN HISTORY OF INDIA*.—A brief survey of the British rule in India starting from the battle of Plassey to the beginning of the home-rule movement.

3 hours a week; first semester, credit 3 units.

History 134; *THE MINOR ORIENTAL COUNTRIES*.—A brief survey of the histories of the minor Oriental countries in the continent, laying emphasis on Siam, Persia, Nepal, Afghanistan, Indo-China, and Malay Peninsula.

3 hours a week; second semester, credit 3 units.

History 197; *LITERATURE OF HISTORY*.—A course designed to familiarize students with the historical bibliography and the important sources and standard authorities in European history.

3 hours a week; first semester, credit 3 units.

History 198; *LITERATURE OF HISTORY*.—A course similar to the one just described. Designed to familiarize students with the historical bibliography and the important sources and standard authorities in American, Philippine, and Oriental history.

3 hours a week; second semester, credit 3 units.

History 201; *RESEARCH IN CHURCH HISTORY*.—Intensive study of Philippine religious conditions from primary sources, with particular emphasis on the work of the religious orders, the strife between State and Church, and its effects. (Open only to graduate students.)

Prerequisites: History 5 and reading knowledge of Spanish.

3 hours a week; second semester, credit 3 units.

History 205; *PRACTICUM IN PHILIPPINE EDUCATIONAL HISTORY*.—Intensive study of educational conditions and practices from primary sources. (Open only to graduate students.)

Prerequisites: History 5 and reading knowledge of Spanish.

3 hours a week; throughout the year, credit 6 units.

History 300; *MASTER'S THESIS*.

DEPATMENT OF LIBRARY SCIENCE

Head of the Department and Associate Professor GABRIEL A. BERNARDO; Assistant Professors ISIDRO SAÑIEL and ISMAEL MALLARI; Instructors Mrs. NATIVIDAD P. VERSOSA and Mr. BENEDICTO C. REYES; Lecturer CIRILO B. PEREZ.

COURSES OFFERED

The courses offered by the Department of Library Science are designed to meet:

(a) The need for technically trained librarians in the public and institutional libraries. The library serves all classes of people, from the barely literate to the highly trained man, so that the person in charge of this service should have a scientific and definite professional preparation for effective library work.

(b) The demand for trained teacher-librarians in the public and private schools, colleges, and universities. The library is now recognized as an essential part of the equipment of every school, college, and university. Modern teaching methods, instead of confining the student to the prescribed text, often require the use of many books. But the library collection, in order to be of value, must be carefully selected, and properly organized and managed by a well-trained librarian.

(c) The need for training students in the use of books and libraries. The laboratory method, once very largely restricted to natural sciences, is now also employed considerably in connection with instruction in language, literature, and in the social sciences. This method requires students to discover for themselves the necessary references from the variety of printed material available in a library in different forms and arrangements. But without the training in the use of books and libraries, they are quite helpless in consulting these tools of effective study.

CURRICULA FOR MAJOR STUDENTS

A prescribed four-year curriculum in library science leading to the degree of Bachelor of Science in Library Science, with the title of Associate in Arts at the end of the second year, will be found in this catalog under the College of Liberal Arts. The courses in library science in this curriculum includes Library Science 121, 122, 123, 124, 126, 155, 157, 165, 166, and 167.

A prescribed four-year curriculum, with major courses in library science leading to the degree of Bachelor of Science in Education, will be found in this catalog under the College of Education. Library Science 121, 122, 123, 155, 157, 165 are given in this curriculum. Library Science 155 takes the place of Education 5.

COURSES FOR MINOR STUDENTS

In order to meet the different aims of students who take library science as their minor studies, or of students desiring to take nine units in library science as electives, the grouping of courses given below is suggested.

(a) For students who desire to have a general idea of the various phases of library work or who intend to be in charge of a small school or public library. Library Science 108, 109 and 121 should be taken. These courses are also recommended for students majoring in English.

(b) For students who desire to acquire a knowledge of the technical work in the library and who intend to become library assistants, Library Science 122, 123, and 109 or 121 are recommended.

(c) For students who desire to increase their knowledge of books but who do not intend to engage in school library work, Library Science 165 and 121; or 165 and 124; or 121, 167, and 109; or 121, 167, and 157; are recommended, particularly for those who are taking journalism. These combinations of courses will be very useful also for students majoring in English.

ELECTIVE COURSES

For freshmen as elective under Group IV, Library Science 12 is recommended.

For other students, Library Science 12, 51, 108, 109, 124, 151, 165, and 167 may be taken as free elective, provided, however, that Library Science 165 is taken either in the third or fourth year, with the first semester's work as prerequisite to the second semester. It is suggested that students desiring to take nine units of library science as elective follow any of the groups suggested above under courses for minor students.

Library Science 12; *USE OF BOOKS AND LIBRARIES*.—Introductory study of reference books and library methods as applied to individual study and research; the library card catalog; the more generally used reference books; Government publications, indexes to periodical literature. Training in the use of bibliographic aids and in compiling simple subject bibliographies.

The aims of this course are to familiarize the students with the resources of the library and with the standard works of reference; to help them to recognize books as essential sources of information and effective means of culture; and to train them in the intelligent and efficient use of books and libraries.

This course is intended for students who are neither majoring nor minoring in library science.

3 hours a week (Class); either semester, credit 3 units.

Library Science 51; *CHEMICAL AND GENERAL BIBLIOGRAPHY I*.—Lectures, problems, and discussions; classification and arrangement of books in the library; the library catalog; the more generally used reference books; chemical and pharmaceutical source books; journals; abstract journals; general and special indexes to periodical literature; methods of compiling subject bibliography.

Prescribed for all second-year students in the School of Pharmacy, and in the third year of the course leading to the degree of Bachelor of Science in Chemistry or the general course leading to the degree of Bachelor of Science with chemistry as major, in the College of Liberal Arts.

1 hour a week (Class); second semester, credit 1 unit.

Library Science 108 (Old course, Lib. Sc. 8); *SCHOOL LIBRARIES I*.—Classification, cataloging, subject headings, and library economy. Lectures, discussions, and practical work, simplified to meet the needs of elementary school and small public libraries. Instruction is given: (a) in classification with the abridged edition of Dewey's Decimal Classification as the basis, and in the assigning of book numbers; (b) in dictionary cataloging and in making a sample catalog; and (c) in assigning subject headings, with Sear's List of Subject Headings for Small Libraries (2d ed.) as the basis. Toward the end of the course the three phases of work are correlated so as to give the students practice in the complete and unified process of cataloging a book, including the assignment of call numbers. Under library economy are included accessioning, shelf-listing, labeling, gifts, withdrawals, charging systems, inventory, library hand writing, checking and care of serials, preparation of book for the shelves, and other mechanical processes.

This course in elementary technical methods is open to students who are neither taking the regular library science course in the College of Liberal Arts, nor pursuing the course in education with major in library science in the college of Education.

3 hours a week (Class); either semester, credit 3 units.

Library Science 109 (Old course, Lib. Sc. 9); *SCHOOL LIBRARIES II*.—Organization and administration of, and book selection for, school libraries.

Part 1 includes the place of the school library in modern education and its relation to curriculum and extra-curricular activities; duties and responsibilities of the school librarian and his relation to administrative officers and faculty; school library rooms; standards of equipment and supplies; records and statistics; care of various types of library material; bookbinding and repair; publicity.

Part 2 covers a study of the principles and methods of selecting books for different types of school libraries, with emphasis on children's literature and on the use of bibliographic aids; selection of periodicals; book buying.

Part 3 is devoted to practice work covering not less than twenty-five hours in the normal and high-school libraries during the semester, and observation of the work of libraries of different types in the city under the guidance of the instructor.

This course is open only to students who are taking neither regular library science course in the College of Liberal Arts, nor the education course with major in library science in the College of Education.

3 hours a week (Class); first semester, credit 3 units.

Library Science 121 (Old course, Lib. Sc. 21); *ELEMENTARY REFERENCE WORK*.—Lectures, discussions and problems: A study of the library catalog as a reference tool, and of standard books of reference both general and special, such as encyclopedias, dictionaries, year-books, directories, periodical indexes, and atlases. Selection, acquisition and use of United States and Philippine Government publications needed in small li-

braries. Practice is given in the evaluation, selection, and use of reference books and in the compilation of reference lists.

3 hours a week (Class); first semester, credit 3 units.

Library Science 122 (Old course, Lib. Sc. 22); *CLASSIFICATION, SUBJECT HEADINGS, AND LIBRARY ECONOMY*.

Part 1: A study of the general principles of classification with an intensive study of the Dewey Decimal Classification. Some attention is given to the Library of Congress system of classification. Assignment of the book number and other parts of the call number.

Part 2: A study of the principles of subject entry in a dictionary catalog and practice in assigning subject headings.

Part 3: Under the heading library economy are grouped various library records and routine, such as mechanical processes, accessioning, shelf-listing, charging systems, care of gifts, serials, pamphlets and supplies; care of shelves, inventory, withdrawals; business correspondence.

3 hours a week (Class); second semester, credit 3 units.

Library Science 123 (Old course, Lib. Sc. 23); *ELEMENTARY CATALOGING*.—A study of general principles which underlie the making of a dictionary catalog; about 150 books selected as illustrative examples of those principles are cataloged by the students during the course, with the revised cards forming a model catalog for each student. Continued work in subject headings. Instruction and practice in ordering and using Library of Congress printed cards, and in alphabeting and filing. Variations of cataloging details in different types of libraries. Some attention is given to the most familiar cataloging reference books.

Prerequisite: Library Science 122. May be taken with this course in the same semester.

3 hours a week (Class); first semester, credit 3 units.

Library Science 124 (Old course, Lib. Sc. 24); *PRINTING, INDEXING, AND BINDING*.—Lectures, assigned reading, discussions and problems.

Part 1: Printing. This includes primitive and ancient records; the history and development of printing, illustrating and bookbinding with particular reference to the Philippines; modern processes involved in book making; printing for libraries; exercises in the preparation of copy for the printer and in proof reading.

Part 2: Indexing. The principal topics are: making matter for indexing; choice of headings, forms of citation; verification; filing; full and brief indexing; periodical indexes; indexing documents; correlation of entries; cross references.

Part 3: Bookbinding. This is devoted to the consideration of bookbinding for libraries. The principal topics are, technical processes; binding materials; rebinding; mending; records and routine; economics in binding; practice in simple sewing and forwarding in the University Library binding section.

3 hours a week (Class); second semester, credit 3 units.

Library Science 126 (Old course, Lib. Sc. 26); *LIBRARY HISTORY*.—This course covers the history of libraries, ancient and modern; brief

comparative studies of the library movements in various countries; famous men in the library world; different types of libraries.

2 hours a week (Class); first semester, credit 2 units.

Library Science 151; *CHEMICAL AND GENERAL BIBLIOGRAPHY II*.—Lectures, problems and discussions: Further study of chemical and pharmaceutical source books, bibliographies, journals, reference serials. Study of society publications and government documents. Practical work in the preparation of subject bibliographies.

Elective for third or fourth year students.

Prerequisite: Library Science 51.

2 hours a week (Class); first semester, credit 2 units.

Library Science 155 (Old course, Lib. Sc. 105); *LIBRARY PRACTICE*.—This course is designed to cover library practice, including the methods in teaching the use of books and libraries, and in teaching library science for beginners.

Part 1: Field work and library visits. Practice is given in different types of libraries in Manila. This actual library experience seeks to cover all phases of library methods and to enable the students to test the theories discussed in the class room. Visits to some of the libraries in Manila under the guidance of the instructor. Weekly conferences.

Part 2: Methods of teaching the use of books and libraries. Lectures, class discussions, and problems covering the contents of courses in the use of books and libraries and methods of teaching such courses in elementary school, high-school, public, and college libraries. Practical work is given to each student in observation of classes, teaching, and preparation and correction of problems.

Parts 3: Problems and methods in teaching library science in normal schools and in teachers' institutes. Includes survey of the conditions and needs of existing school libraries in the Philippines; discussion of curriculum construction to suit various local needs; relation of the curriculum to actual library service; preparation of lesson plans. Class work consists largely of reports and discussions. Each student is required to observe classes in elementary library science as given in the University and to correct class problems.

Prerequisites: Library Science 121, 122, and 123.

This course takes the place of Education 5 in the case of students who major in library science in the College of Education.

4 hours a week (Class and practical work); throughout the year, credit 8 units.

Library Science 157 (Old course, Lib. Sc. 107); *LIBRARY ADMINISTRATION*.—Library organization and legislation. Buildings and equipment. Discussion of administrative topics such as library finance, accounts, and budgets, statistics and reports, rules, regulations, and schedules. Local work. Standard organization and equipment for school libraries. Library schools, institutes and training classes. Library work as a profession, ethics of librarianship, and library opportunities. Library commissions and their work. Library extension. Library publicity. Inter-

library relations and coöperation with schools. Story-telling and work with the blind. Local and national library associations and clubs; international library and bibliographical congresses, conferences and committees; the International Federation of Library associations.

3 hours a week (Class); second semester, credit 3 units.

Library Science 165 (Old course, Lib. Sc. 115); *SELECTION, EVALUATION, AND ACQUISITION OF BOOKS*.—Lectures, problems, discussions and readings on the principles of selecting and acquiring the best literature for various types of libraries and readers; study of Philippine trade and national bibliographies.

The chief aims of the course are to cultivate the ability in the selection and evaluation of books accurately and quickly for library purchase, to facilitate choice from a library collection of the right book for a given reader, and to meet the need of bringing up to date the various phases of Philippine bibliography. Students are required to read and examine a number of representative books in various fields, adapting the reading as far as possible to their individual needs, especially in the consideration of recent publications. Particular emphasis is also laid on the selection of books by means of aids and tools. Practice in the interpretation of book notes and reviews as found in important library book lists and in the leading book reviewing periodicals, and class discussions and the preparation of book notes, afford opportunity to develop conciseness in verbal and written expression and speed in deciding choices for immediate and possible purchases of books for libraries. Considerable attention is also given to the study, selection, and use of Philippine bibliographies, library catalogues and other tools, and to the analysis of book trade in the Philippines. In the preparation of bibliographies of Philippine publications, students are individually assigned to special fields which they are required to cover on the most comprehensive scale.

Students are advised to take as many courses as possible in English and general literature before taking this course.

3 hours a week (Class); throughout the year, credit 6 units.

Library Science 166 (Old course, Lib. Sc. 116); *ADVANCED CATALOGING AND CLASSIFICATION*.—A continuation of Library Science 122 and 123.

Part 1: Advanced work with greater emphasis on the difficult and specialized types of cataloging. Covers subject headings; cataloging of periodicals; serial publications of societies and institutions, public documents, analytics, special problems of cataloging and assignment of subject headings of music material, the administration of the cataloging department, including its relation to other departments of the library.

Part 2: Devoted to a study of the chief differences between the Dewey Decimal Classification and the Classification of the Library of Congress with emphasis on the latter. Practice is given in the actual classification of books and in the handling of difficult problems of classification.

2 hours a week (Class); second semester, credit 2 units.

Library Science 167 (Old course, Lib. Sc. 117); *ADVANCED REFERENCE WORK*.—Lectures, problems and discussions.

Part 1: Further study of general and special reference books, including the study of publications of learned societies, and of trade, scientific and professional periodicals.

Part 2: A study of the publications of the United States Federal, and of the Philippine Insular, Governments with emphasis on their use as reference material. Principal topics: frequency and distribution of publications; selection, arrangement, and library use of material, important indexes and aids.

Part 3: The more important bibliographies of various subjects are examined and discussed. Includes practical use of aids for purposes of reference work; directions for compiling subject bibliography; preparation of lists of references on assigned subjects.

Prerequisite: Library Science 121 or 12.

3 hours a week (Class); first semester, credit 3 units.

MEDICAL BIBLIOGRAPHY AND PREPARATION OF ARTICLES FOR PUBLICATION.—A lecture course with assigned readings and problems. Includes the library card catalog; general and special medical references; medical periodicals and abstract journals; government publications useful to physicians; medical bibliographies and indexes; methods of research in medical literature; instruction in compiling subject bibliographies; preparation of manuscript; proof reading. Each student is required to compile a short bibliography on an approved subject.

Eleven lectures in the first semester of the second year medical course. Total, 11 hours.

DEPARTMENT OF MATHEMATICS

Professors VIDAL A. TAN (Head), V. D. GOKHALE; Associate Professor RUTH McCracken-Walser; Assistant Professors DELFIN DE LA PAZ, FRANCISCO PEREZ, TERESA YULO-TAN, TELESFORO TIENZO, ENRIQUE T. VIRATA, Instructors BARTOLOME C. BLANCO, TERESA ZAVALLA-ORTIGAS, LUISA REYES, FEDERICO ROA.

The courses offered by the Department of Mathematics are numbered as follows:

0 to 99 for undergraduates only (Junior College courses).

100 to 199 Senior College Courses.

200 to 299 primarily for graduates.

The College of Liberal Arts offers undergraduate students a four-year college curriculum leading to the degree of B.S. with specialization in Mathematics. On graduation the students will be fitted (a) to undertake graduate study in Mathematics in the University of the Philippines, or in American universities; (b) to fill superior positions in the secondary schools.

The required curriculum for such students comprises the work done in the following courses: Math. 1, 4, 10, 15, 21, 105, 111 and one other course above 100.

Students interested in this curriculum should consult the Head of the Department before registration.

GRADUATE COURSES.—The department offers a variety of courses from which a year's study may be chosen leading to a Master's degree. Students should consult the Head of the Department before registration.

Mathematics A; *REVIEW OF ELEMENTARY ALGEBRA AND GEOMETRY.*

3 hours a week; one semester, no credit.

Mathematics 0; *SOLID GEOMETRY.*—Solid and Spherical Geometry. An elective course open to any student in the College of Liberal Arts.

3 hours a week; one semester, credit 3 units.

Mathematics 1; *COLLEGE ALGEBRA.*—Quadratics with Graphs; Progressions; Inequalities; Complex Numbers; Permutations and Combinations; Binomial Theorem; Probabilities; Determinants; Theory of Equations, Mathematical Induction.

Prerequisite: Mathematics A or equivalent.

3 hours a week; one semester, credit 3 units.

Mathematics 2; *THEORY OF INVESTMENTS.*—Logarithms; Simple and Compound Interest; Annuities; Bonds. A required course for Commerce students.

Prerequisite: Mathematics 1.

3 hours a week; one semester, credit 3 units.

Mathematics 3; *ALGEBRA AND TRIGONOMETRY.*—Review of High School Algebra, Quadratic Equations and Graphs; Arithmetical and Geometrical Progressions; Definitions of Trigonometric functions; Logarithms; Solution of Right Triangles. For pharmacy and dentistry students and students majoring in General Science. No credit for students who have passed Math. 1. May not be substituted for Math. 1, 4, or 8.

3 hours a week; one semester, credit 3 units.

Mathematics 4; *TRIGONOMETRY.*—Logarithms; Trigonometric Functions with Graphs; General Formulae; Solution of Triangles with Applications; Elements of Spherical Trigonometry with Applications.

Prerequisite: Mathematics A or equivalent.

3 hours a week; one semester, credit 3 units.

Mathematics 7; *ALGEBRA.*—Review of Elementary Algebra and Geometry; Variations and Linear Graphs and General Graphs; Binomial Theorem; Progressions; Complex Numbers; Permutations and Combinations; Probabilities. (Premedical students only) No credit for students who have passed Math. 1.

3 hours a week; one semester, credit 3 units.

Mathematics 8; *ALGEBRA AND TRIGONOMETRY.*—Partial Fractions, Determinants, Theory of Equations; Logarithms, Trigonometric Functions;

Solution of Triangles. (For premedical students only)

Prerequisite: Mathematics 7, or equivalent.

3 hours a week; one semester, credit 3 units.

Mathematics 10; *ANALYTICAL GEOMETRY*.—Plane Analytics; Introduction to Solid Analytics. Required of students majoring in Mathematics.

Prerequisites: Mathematics 1 and Mathematics 4.

5 hours a week; one semester, credit 5 units.

Mathematics 11 and 12; *ALGEBRA, TRIGONOMETRY, AND ANALYTIC GEOMETRY*.—A sequence of two one-semester courses combining parts of Mathematics 1, 4, and 10 to suit the needs of engineering students. Required of first year engineering students.

Prerequisite: Mathematics A or equivalent.

5 hours a week; credit 5 units a semester.

Mathematics 13; *TRIGONOMETRY*.—For students of surveying, covering logarithms, solution of plane triangles and elements of solid geometry.

4 hours a week; first semester, credit 4 units.

Mathematics 14; *ALGEBRA AND TRIGONOMETRY*.—Spherical Trigonometry, Graphs, Quadratics, Progressions, Inequalities, Complex Numbers, Binomial Theorem, Determinants, Theory of Equations.

Prerequisite: Mathematics 13.

5 hours a week; second semester, credit 5 units.

Mathematics 15; *DESCRIPTIVE GEOMETRY*.—Representation of lines, planes, and surfaces and of their relations, tangencies, intersections and developments; warped surfaces; solution of problems in orthographic, central and oblique projections; shades, shadows and perspective. Required of Liberal Arts students majoring in mathematics.

Prerequisite: Mathematics 0.

3 hours a week, one semester, credit 3 units.

Mathematics 17; *ANALYTICAL GEOMETRY*.—Coördinate Systems. Straight Line, Circle and Other Conics, Polar Coördinates. Transformation of Coördinates. Primarily intended for science students. Cannot be substituted for Mathematics 10.

3 hours a week, one semester, credit 3 units.

Mathematics 18; *CALCULUS*.—Differentiation. Application to physics and Geometry; Maxima and Minima; Integration. Definite Integrals and Applications; Series. Primarily intended for science students.

Prerequisite: Mathematics 17 or equivalent.

3 hours a week, one semester, credit 3 units.

Mathematics 21; *CALCULUS I*.—Required of engineering students and students majoring in Mathematics. Prerequisite: Mathematics 10 or 12.

5 hours a week; first semester, credit 5 units.

Mathematics 22; *CALCULUS II*.—Required of engineering students and students majoring in Mathematics. Prerequisite: Mathematics 21.

5 hours a week; second semester, credit 5 units.

Mathematics 51; *INTRODUCTORY LECTURES IN ADVANCED MATHEMATICS*.—Lectures in descriptive, projective, non-Euclidian geometries, series, theory of numbers, and a critical review of plane geometry. Intended for education students.

Prerequisite: Mathematics 21.

3 hours a week; one semester, credit 3 units.

Mathematics 105; *DIFFERENTIAL EQUATIONS*.—A first course dealing mainly with the more usual forms of Ordinary Differential Equations and with an introduction to Partial Differential Equations. Open to students who have had a year of calculus.

3 hours a week; first semester, credit 3 units.

Mathematics 108; *DEFINITE INTEGRALS*.—Properties and methods of computing Definite Integrals; Improper and Multiple Integrals; Eulerian; Integrals, with an introduction to Gamma and Beta functions. Prerequisite: Differential Equations.

3 hours a week; one semester, credit 3 units.

Mathematics 111; *THEORY OF EQUATIONS*.—Graphs, solution of cubic equations; quartic equations; symmetric function; locations of roots; Horner's and Newton's methods of approximation to roots. Prerequisite: Mathematics 21.

Textbook: Dickson's First Course in the Theory of Equations.

3 hours a week; one semester, credit 3 units.

Mathematics 112; *THEORY OF PROBABILITY*.—Substitutions and derangements. Applications to Probability. Tschuprow's Theory of Mathematical expectation. Tschebycheff's Inequality. Theorems of Bernoulli and Poisson.

Prerequisite: Mathematics 1, 4, 17, 18 or equivalent.

3 hours a week; one semester; credit, 3 units.

Mathematics 113; *FINITE DIFFERENCES*.—Differences; Interpolation and Summation; Elementary Difference Equations.

Prerequisite: Mathematics 112.

3 hours a week; one semester; credit, 3 units.

Mathematics 121; *ANALYTICAL MECHANICS*.—Prerequisites: Mathematics 21 and 22, and some College Physics.

5 hours a week; one semester, credit 5 units.

Mathematics 125; *MODERN GEOMETRY*.—An elementary study of projective geometry, including the Non-Euclidian. Prerequisite: Mathematics 111.

5 hours a week; one semester, credit 5 units.

Mathematics 131; *ADVANCED CALCULUS*.—Rules for differentiation and integration, mean value theorems, Taylor's expansion, infinite series, implicit functions, definite Riemann integral, line and surface integrals. Prerequisite: Mathematics 21.

5 hours a week; one semester, credit 5 units.

Mathematics 151; *FUNDAMENTAL CONCEPTS OF MATHEMATICS*.—An elementary study based partly on Young's book on the subject. Primarily intended for education students. Prerequisite: Mathematics 21.

5 hours a week; one semester, credit 5 units.

Mathematics 155; *ELLIPTIC INTEGRALS AND FUNCTIONS*.—Reduction of Elliptic integrals to their canonical forms and the elementary properties of elliptic functions. Prerequisite: Mathematics 105.

3 hours a week, one semester, credit 3 units.

Mathematics 201; *INTRODUCTION TO GENERAL ANALYSIS*.—

3 hours a week, one semester, credit 3 units.

Mathematics 203; *PROJECTIVE GEOMETRY*.—

3 hours a week, one semester, credit 3 units.

Mathematics 213; *HIGHER ALGEBRA*.—

3 hours a week, one semester, credit 3 units.

Mathematics 214; *VECTORS AND MATRICES IN HIGHER ALGEBRA*.

3 hours a week; one semester, credit 3 units.

Mathematics 225; *FUNCTIONS OF A COMPLEX VARIABLE*.—Complex number system; Cauchy's theorem; Taylor's and Laurent's expansions; elementary functions; conformal representation; Riemann surfaces; analytic continuation.

3 hours a week; one semester, credit 3 units.

Mathematics 231; *METRIC DIFFERENTIAL GEOMETRY*.—

3 hours a week, one semester, credit 3 units.

Mathematics 233; *PROJECTIVE DIFFERENTIAL GEOMETRY. I*.—

3 hours a week, one semester, credit 3 units.

Mathematics 234.—*PROJECTIVE DIFFERENTIAL GEOMETRY II*.—

3 hours a week; one semester, credit 3 units.

Mathematics 237; *FUNCTIONS OF A REAL VARIABLE*.—

3 hours a week; one semester, credit 3 units.

Mathematics 238; *MODERN THEORIES OF INTEGRATION*.—

3 hours a week; one semester, credit 3 units.

Mathematics 239; *THEORY OF NUMBERS*.—

3 hours a week; one semester, credit 3 units,

Mathematics 240; *THEORY OF ALGEBRAIC NUMBERS*.—

3 hours a week, one semester, credit 3 units.

Mathematics 300; *MASTER'S THESIS*.—Thesis work leading to Master's degree. The adviser will be recommended by the Head of the Department.

DEPARTMENT OF MODERN LANGUAGES

Associate Professor and Acting Head, EMILIO NATIVIDAD; Assistant Professor ANGELA B. DE LA CANTERA; Assistant Professor AGUSTIN LLENADO; Assistant Professor CECILIO LOPEZ; Instructors: JOSE PATERNO, PURA SANTILLAN.¹

French 0; *LECTURES IN FRENCH*.—French phonetics: individual sounds, words, phrases, sentences and sentence melody. Open only to students of the Conservatory of Music.

1 hour a week (Class); throughout the year, credit 1 unit.

French 1; *ELEMENTARY GRAMMAR AND COMPOSITION*.—Reading and translation of easy French prose.

3 hours a week (Class); throughout the year, credit 6 units.

French 2; *INTERMEDIATE FRENCH*.—Second part—Grammar and composition—sight translation and conversations.

Prerequisite: French 1.

3 hours a week (Class); throughout the year, credit 6 units.

French 104; *FRENCH PHILOLOGY*.—This course is a survey or introduction to French Philology and Philological research, and a presentation or exhibition of French Philology.

Prerequisites: French 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

French 111; *READINGS IN MODERN FRENCH LITERATURE*.—Sight reading and translations of best modern authors. Lectures on French literature.

Prerequisites: French 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

French 112; *HISTORY OF THE FRENCH LANGUAGE*.—This course deals with the evolution of the French language from the earliest known era to the present.

Prerequisites: French 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

German 0; *LECTURES IN GERMAN*.—A phonetic German course, including pronunciation, diction and grammar. Open only to students of the Conservatory of Music.

1 hour a week (Class); throughout the year, credit 1 unit.

German 1; *A FIRST YEAR COLLEGE COURSE IN GERMAN*.—Pronunciation, grammar, easy readings, with practice in speaking and writing German.

3 hours a week (Class); throughout the year, credit 6 units.

¹ On leave

German 2; *A PREPARATORY COURSE FOR THE READING OF LITERARY AND SCIENTIFIC AUTHORS*.—Class and outside reading of selected texts. Grammar and written exercises continued.

Prerequisite: German 1.

3 hours a week (Class); throughout the year, credit 6 units.

German 101; *HISTORY OF GERMAN LITERATURE*.—This course is designed to introduce the students to the lives and works of the more important authors and to give an insight into the different epochs of German literature.

Prerequisites: German 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

German 102; *HISTORY OF THE GERMAN LANGUAGE*.—This course deals with the evolution of the German language from the earliest times to the present day.

Prerequisites: German 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

German 104; *SCIENTIFIC GERMAN*.—Study of German scientific author of special interest to individual students. Works and monographs on medicine, chemistry, ethnography etc. reading under guidance of the instructors.

Prerequisites: German 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

German 105; *MASTERPIECES OF GERMAN LITERATURE*.—This course enables the student to read intelligently the great authors of Germany. Special attention is given to prosody, to vocabulary and syntax and to the literary merits of each work.

Prerequisites: German 1 and 2.

3 hours a week (Class); throughout the year, credit 6 units.

DEPARTMENT OF ORIENTAL LANGUAGES

Professor OTTO S. SCHEERER (Emeritus); Assistant Professor CECILIO LOPEZ (Acting Head).

With exception of the courses in Philippine linguistics, which are scientific and comparative in nature, the courses in this department are chiefly designed to give to students the practical use of the languages concerned; the exercises are, however, interspersed with occasional lectures on historical or cultural subjects designed to bring the spheres of thought underlying these languages more comprehensively before the mind of the student.

SECTION OF PHILIPPINE LINGUISTICS

Instruction in Philippine Linguistics in the University has for its chief aim to enable students intelligently to judge of the place occupied by Philippine languages among other form of human speech, especially among the languages of surrounding parts of Asia and Oceania, and to make it

possible for the student to form for himself an intelligent opinion of the future of the vernaculars. It is sought to attain these ends, first, by an exposition of the history, methods and aims of the science of language in general, and, second, by a presentation of the characteristics of the languages making up the Philippine group.

Philippine Linguistics 100; *GENERAL COURSE IN PHONETICS*.—A comparison between the sounds (isolated, in words and connected speech) in English and the major languages of the Philippines.

3 hours a week (Class); first semester, credit 3 units.

Philippine Linguistics 101; *HISTORY AND METHODOLOGY OF THE COMPARATIVE STUDY OF LANGUAGE*.—Ancient views largely surviving till today. Beginnings of the science of language through the introduction into Europe of the study of Sanskrit by Humboldt and others. Philosophical views of language. Development of modern views. Study of phonetics and sound-changes.

3 hours a week (Class); first semester, credit 3 units.

Philippine Linguistics 102; *THE PHILIPPINE GROUP OF LANGUAGES*.—History of the exploration of Oceanic languages. The Austronesian (or Malayo-Polynesian) trunk. The Indonesian family of languages. The Philippine group, its extension and chief characteristics. Comparative study of the vocabulary, phonology, and grammar of its principal members. Spelling reforms. Bibliography of Philippine languages. Genesis of national languages in other countries.

3 hours a week (Class); second semester, credit 3 units.

Philippine Linguistics 103; *COMPARATIVE PHONETICS OF PHILIPPINE LANGUAGES*.—An investigation into the genealogical relationship of the Philippine languages by comparing their different sounds and projecting them back to one original and common ancestor.

3 hours a week (Class); second semester, credit 3 units.

Philippine Linguistics 104; *METHOD OF STUDY OF LANGUAGE*.—The study of language by investigating its sounds, words, morphology, semantics and psychology.

Prerequisites: One year of French and one of German at least.

3 hours a week (Class); second semester, credit 3 units.

Philippine Linguistics 202; *SEMINAR IN PHILIPPINE LINGUISTICS*.—Original research directed upon special points in Philippine Linguistics under guidance of the instructor. Prerequisites: Phil. Linguistics 101 and 102, and a reading knowledge of Spanish.

3 hours a week; either semester, credit 3 units a semester.

SECTION OF CHINESE

(No courses under this Section will be offered in the academic year 1932-33.)

SECTION OF JAPANESE

(No courses under this Section will be offered in the academic year 1932-33.)

DEPARTMENT OF PHILOSOPHY

Professor HENRY S. TOWNSEND (Head); Assistant Professor DHIRENDRA NATH ROY; Instructor Mr. CARLOS O. BRANDES.

Philosophy 1; *LOGIC, INDUCTIVE AND DEDUCTIVE*.—A course introductory to the method of science and not to epistemology. Recitations, lectures, written exercises, etc. Required in second-year library science and in first-year preparatory law.

3 hours a week; either semester, credit 3 units.

Philosophy 2; *THE PRINCIPLES AND METHODS OF SCIENCE*.—A brief elementary course, supplementary to Philosophy 1. Recitations, lectures, practical exercises, examination of discoveries of science new from month to month, with a view to the understanding of the methods actually followed by the recognized great scientists of the day.

Prerequisite: Philosophy 1.

3 hours a week; second semester, credit 3 units.

Philosophy 3; *THE HISTORY OF PHILOSOPHY*.—A survey course covering briefly Ancient, Medieval, and Modern periods, chiefly European and American, but noting also Oriental systems of thought. Designed as a preparation for the more detailed study of particular problems and periods of philosophy in later courses. Textbook with lectures and outside readings.

3 hours a week; first semester, credit 3 units.

Philosophy 4; *EFFECTIVE STUDY HABITS*.—Incentives and motives college problems new to the secondary graduates. Planning activities. Guiding principles. Problem method. Self-recitation method. Effective reading. Book notes and lecture notes. Research notes. Reviewing and utilizing notes. Preparation for tests and examinations. Causes of failure. Plans and problems of the students. Open to freshmen only.

3 hours a week; first semester, credit 3 units.

Philosophy 5; *INTRODUCTION TO PHILOSOPHY*.—A general orientation in the scope, methods, and theories of Philosophy, the definition of philosophical terms and of the problems arising from an attempt to interpret the world. May be taken in lieu of Philosophy 3.

3 hours a week; either semester, credit 3 units.

Philosophy 103A; *THE HISTORY OF ANCIENT AND MEDIEVAL PHILOSOPHY*.—A brief course covering the period from Thales to the fall of Constantinople, with special emphasis upon the philosophical systems of Plato and Aristotle and their influence upon the development of Scholasticism. A brief view of Neo-Scholasticism. Lectures, recitations,

and written exercises. Especially for graduate students but may be taken by senior college students having credits in Philosophy 1 and Psychology 1.

3 hours a week; first semester, credit 3 units.

Philosophy 103B; *THE HISTORY OF MODERN PHILOSOPHY*.—This course covers the period from the fall of Constantinople to the present, with special studies in Idealism, Pragmatism, Neo-Realism, Neo-Rationalism, the philosophy of Henri Bergson, and other present-day systems of thought. Lectures, recitations, special studies, and written exercises. Especially for graduate students but may be taken by senior college students having credits in Philosophy 1 and Psychology 1.

3 hours a week; second semester, credit 3 units.

Philosophy 104; *THE PRINCIPLES OF ETHICS*.—A search for the principles of right and wrong in the various relations of life. Lectures, recitations, and studies. This course should follow Philosophy 1.

3 hours a week; first semester, credit 3 units.

Philosophy 105; *PROBLEMS OF PHILOSOPHY*.—A course designed to lead students to think out intelligently their own opinions in the light of those of the world's great thinkers, on some of the problems of philosophy. This course should follow Philosophy 3.

3 hours a week; second semester, credit 3 units.

Philosophy 106; *THE PHILOSOPHY OF RELIGION*.—A study of the religious sentiments in its various manifestations. The relations of the various religions to the philosophy of the people, whether subconsciously held or reasoned. The religious beliefs of the great philosophers, European, American, and Asiatic.

Prerequisite: Philosophy 3.

3 hours a week; first semester, credit 3 units.

Philosophy 201; *STUDIES IN CONTEMPORARY PHILOSOPHY*.—A seminar, meeting once a week, for the semi-independent study of contemporary problems or systems of philosophy. The content of the course will be varied from time to time, as interest and opportunities may dictate. Readings, reports, and discussions. Owing to limited library facilities the registration for this course will have to be restricted rather closely. A graduate course, to which exceptional Senior College students may be admitted.

Prerequisite: 9 units of credit in philosophy.

3 hours a week; both semesters, credit 3 units each semester.

Philosophy 202; *PHILOSOPHY OF CURRENT SOCIAL PROBLEMS*.—A study of some of the Social Problems of the day in the light of the thoughts of the great philosophers on the subject. The content of the course will be varied from time to time as interest and opportunity may dictate. A seminar, meeting once a week for reports on required

readings with subsequent discussions. Enrollment restricted in accordance with library facilities.

Prerequisite: Philosophy 3 and such other credits as the subject chosen for study may dictate.

3 hours a week; both semesters, credit 3 units each semester.

DEPARTMENT OF PHYSICS

Professor G. B. OBEAR, Head; Associate Professor A. L. CORCUERA; Assistant Professor T. P. ABELLO; Instructors: C. DEL ROSARIO, on leave; E. C. TOLENTINO, E. T. MENDOZA, M. G. DE LA CRUZ, A. E. ESGUERRA, C. DE LOS REYES, F. R. LOZADA.

The Department of Physics occupies a portion of the first floor of Rizal Hall and is in a position to teach the lower as well as the higher branches of Physics. Besides the ordinary collection of apparatus used for routine instruction, the Department possesses a good collection of special apparatus for the use of advanced students and members of the instructing staff, in pursuing special investigations.

The Department has, through the Government, an organic connection with the Bureau of Science and with the P. I. Weather Observatory, having reasonable access to their equipment and facilities. The Department acknowledges the cooperation of these institutions. Books and periodicals relating to Physics are to be found in the University Library, the Library of the Bureau of Science, and also in a small private library at present housed in the Department.

The courses in the department are designed to meet the needs of Junior College, Senior College, and Graduate students. For students desiring the degree of B.S. an arrangement of courses conforming to the requirements of Group III can be made upon application by the student.

The curriculum can be so arranged as to give thorough training for: (a) graduate work in physics; (b) the better positions in physics in the insular secondary schools; (c) the major instructorships in the department.

Courses 101, 102, 103, 106, 107, 108 may be regarded as elective for those students who, while wishing to go further into the subject, do not propose to work for an advanced degree in Physics.

Students should note carefully the prerequisites for the various courses, so that their applications may be valid.

Any student who contemplates doing major work in Physics should consult the Head of the Department. The Department is in a condition to offer work, along certain lines of research, leading to the degree of Master of Science.

Those students who are majoring in Physics as per the Curriculum of the College of Education are very strongly advised to arrange their courses in such a way that in their first year they take Math. 1, 4, Chemistry 23; in the second year, Math. 17, 18, Phy. 35, 36; in the third year, Phy. 104, 105, Phy. 101; in the fourth year, Phy. 102, 103, or Phy. 106, 107. The above courses in Mathematics and Chemistry will be of much help to such students in their work in Physics.

(a) Students not required to take or do not intend to take Physics in their subsequent work.

Credit will be granted on the strength of record as shown in U. P. Form 1. Physics laboratory notebook presented must be accompanied by the required certificates as heretofore, but the Department of Physics waives the right to examine the notebook if the officer charged, to pass on the application is satisfied with the grade.

(b) Students required to take, or those who intend to take Physics. Such students will be admitted to Physics 30, 31, 33, or 35 (all course in general physics) by passing a comprehensive written examination in high-school Physics, covering a year's work including both class-room and laboratory work. The examination is intended to reveal the students' acquaintance with the more important phenomena of Physics, and with the principles involved in their explanation. Students failing in this examination will be required to take Physics A (elementary physics).

Students will be required to take this examination when they first enter the University. If not taken then, and the student can not show cause satisfactory to the Department of Physics, he will be required to take Physics A before taking any other course in Physics.

Physics A; *ELEMENTARY PHYSICS*.—This course is an introduction to the study of Physics, and is especially designed for those who do not present acceptable entrance Physics for credit. The work consists of lectures, laboratory work, and the solution of simple problems.

7 hours a week (4 Lab., 3 Lect.); first semester, credit entrance only.

Physics A; *ELEMENTARY PHYSICS* (*Prerequisites: Physics A first semester, or its equivalent*).—Sections same as above in first semester.

7 hours a week (4 Lab., 3 Lect.); second semester, credit entrance only.

JUNIOR COLLEGE COURSES

Physics 30; *GENERAL PHYSICS* (*Prerequisite: Physics A*).—A special course designed for use by students in the General Science course of the College of Education. The course will be given in the fourth year to all qualified students. The weight of the course will be that of Physics 31, 32 (old 2M), and will consist of a condensed course covering a year's work in Physics 31, 32.

9 hours a week (3 Lect., 6 Lab.); second semester, credit 5 units.

Physics 31; *GENERAL PHYSICS* (*Prerequisites: Physics A, or its equivalent; Mathematics 4*).—A course of the same importance as that of Physics 33. Certain topics which should be of special value to premedical students are emphasized. The work is carried on by means of lectures, quizzes, laboratory work and problems in physics.

6 hours a week (3 Lab., 3 Lect.); first semester, credit 4 units.

Physics 32; *GENERAL PHYSICS* (*Prerequisite: Physics 31, first semester*).—This course is a continuation of Physics 31.

Sections as above in the first semester.

6 hours a week (3 Lab., 3 Lect.); second semester, credit 4 units.

Physics 33; *GENERAL PHYSICS*. (*Prerequisites: Physics A, or its equivalent; Mathematics 4*).—A general first-year course in college Physics. It embraces lectures, quizzes, laboratory work, and the solution of problems illustrating the application of Physics to engineering.

9 hours a week (6 Lab., 3 Lect.); first semester, credit 5 units.

Physics 34; *GENERAL PHYSICS*. (*Prerequisite: Physics 33, first semester*).—This course is a continuation of Physics 33.

Sections as above in the first semester.

9 hours a week (6 Lab., 3 Lect.); second semester, credit 5 units.

Physics 35; *GENERAL PHYSICS* (*Prerequisites: Physics A, or its equivalent; Math. 4*).—This course is of the same weight as Physics 31, or Physics 33, and is a combination of both. It consists of the lectures of Physics 31, and the laboratory work of Physics 33.

9 hours a week, (3 Lect., 6 Lab.); first semester, credit 5 units.

Physics 36; *GENERAL PHYSICS* (*Prerequisite: Physics 35*).—This course is a continuation of Physics 35.

9 hours a week, (3 Lect., 6 Lab.); second semester, credit 5 units.

SENIOR COLLEGE COURSES

Physics 101; *HISTORY OF PHYSICS* (*Prerequisites: Physics 31, 32, or 33, 34, or 35, 36*).—A course which aims to give the student a historical foundation in Physics. The progress in Physics is traced from a few centuries before Christ, to modern times. The course, primarily undergraduate, may be taken by graduates also. A reasonable amount of outside reading is required, together with the preparation of historical papers.

Lectures, M. W. F. at 11.00 a. m.

3 hours a week (Lect.); first semester, credit 3 units.

Physics 102; *MODERN PHYSICS* (*Prerequisites: Physics 31, 32, or 33, 34, or 35, 36 or their equivalent*).—A general elementary treatment of the advances made in atomic Physics during the period from about 1896 to date. The course is composed of simple discussions of cathode rays, Röntgen rays, Radioactivity, Electron theory, atomic structure, Quantum theory, Spectra, Photoelectric effect, Thermonics, Theory of relativity.

Hours to be arranged.

3 hours a week (Lect.); first semester, credit 3 units.

Physics 103; *MODERN PHYSICS* (*Prerequisite: Physics 102*).—A continuation of Physics 102.

3 hours a week (Lect.), second semester, credit 3 units.

Physics 104; *MECHANICS, MOLECULAR PHYSICS, HEAT* (*Prerequisites: Physics 31, 32, or 33, 34, or 35, 36 and Mathematics 4*).—This course is a detailed discussion of the above branches of Physics. The laboratory work involves accurate determinations of values which reveal to the students the principles discussed in the lecture. For further information consult the Department of Physics.

9 hours a week (6 Lab, 3 Lect); first semester, credit 5 units.

Physics 105; *ELECTRICITY, SOUND, LIGHT* (*Prerequisite: Physics 104*).—A continuation of Physics 104, and conducted along the same general lines.

Same hours as in first semester.

9 hours a week (6 Lab, 3 Lect); second semester, credit 5 units.

Physics 106; *INTRODUCTION TO THEORETICAL PHYSICS* (*Prerequisites: Phys 31, 32, or 33, 34, or 35, 36 or their equivalent, Mathematics 105*).—In this course, the student is made acquainted with some of the applications of mathematical procedure as applied to the discussion of physical principles. It is so designated as to be of considerable value to students in Chemistry as well as those in Physics.

Hours to be arranged.

3 hours a week (Lect), first semester, credit 3 units.

Physics 107; *INTRODUCTION TO THEORETICAL PHYSICS* (*Prerequisite: Physics 106*).—A continuation of Physics 106.

Hours the same as in the first semester.

3 hours a week (Lect), first semester, credit 3 units.

Physics 108; *INTRODUCTION TO WIRELESS COMMUNICATION* (*Prerequisites: Physics 31, 32, or 33, 34, or 35, 36 and both differential and integral calculus*).—A course designed to present to students the fundamentals of wireless telegraphy and wireless telephony.

Hours to be arranged.

3 hours a week (Lect), first semester, credit 3 units.

Physics 109 (*Prerequisites: Physics 31, 32, Math. 17, 18*).—This is a special course to satisfy the needs of those students who take the four-year course in Chemistry leading to the Bachelor of Science degree in Chemistry. The course is a condensation of Physics 104, 105, taking up certain special topics, particular stress being laid upon Mechanics, Heat, Electricity, and Light.

9 hours per week (3 Lect, 6 Lab), first semester, credit 5 units.

Physics 110 (*Prerequisites: Physics 109, Math 17, 18*).—This course comprises the work of the first semester of the year course Physics 102, 103. This course is exclusively for those students who are enrolled in the Chemistry course leading to the degree of Bachelor of Science in Chemistry.

3 hours per week (3 Lect). Second semester, credit 3 units.

GRADUATE COURSES

Physics 201; *THERMODYNAMICS, MOLECULAR PHENOMENA* (*Prerequisites: Phy. 104, 105, Phy. 106, 107, Math. 21, 22, Math. 105*).

9 hours a week (6 Lab, 3 Lect); first semester, credit 5 units.

Physics 202; *THERMODYNAMICS, MOLECULAR PHENOMENA* (*Prerequisite: Phy. 201*).—A continuation of Physics 201.

9 hours a week (6 Lab, 3 Lect); second semester, credit 5 units.

Physics 203; *LIGHT* (*Prerequisites: same as for Phy. 201*):

9 hours a week (6 Lab, 3 Lect); first semester, credit 5 units.

Physics 204; *LIGHT* (*Prerequisite: Phy. 203*).—A continuation of Physics 203

9 hours a week (6 Lab, 3 Lect); second semester, credit 5 units.

Physics 205; *ELECTRICITY AND MAGNETISM* (*Prerequisites: same as for Phy. 201*):

9 hours a week (6 Lab, 3 Lect); first semester, credit 5 units.

Physics 206; *ELECTRICITY AND MAGNETISM* (*Prerequisite: Phy. 205*).—A continuation of Physics 205.

9 hours a week (6 Lab, 3 Lect); second semester, credit 5 units.

Physics 207; *ELECTRON THEORY AND ATOMIC STRUCTURE* (*Prerequisites: same as for Phy. 201, together with Phy. 102, 103*):

3 hours a week (Lect); first semester, credit 3 units.

Physics 208; *ELECTRON THEORY AND ATOMIC STRUCTURE* (*Prerequisite: Phy. 207*).—A continuation of Physics 207.

3 hours a week (Lect); second semester, credit 3 units.

Physics 209; *THEORETICAL MECHANICS* (*Prerequisites: same as for Phy. 201*).

3 hours a week (Lect); first semester, credit 3 units.

Physics 210; *THEORETICAL MECHANICS* (*Prerequisite: Phy. 209*).—A continuation of Physics 209.

3 hours a week (Lect); second semester, credit 3 units.

For further details regarding the above courses the student should consult the Head of the Department.

Physics 221, 212; *THEORY OF SOUND*.—The course will consist of a set of lectures.

(*Prerequisites: Physics 104, 105, 106, 107, Mathematics 21, 22, 105*).

3 hours a week; credit 3 units a semester, throughout the year.

Physics 300. This course embraces the work done in preparing a *THESIS* for the degree of Master of Science in Physics. Although no specified number of hours per week can be assigned to Thesis work—the student being expected to put all the time he can upon it—yet 18 to 20 hours per week may be considered as a rough approximation. The time for a thesis is largely governed by the problem to be solved.

If the student so desires he may present his own problem to the Head of the Department who will pass upon it as to its suitability for a thesis. Otherwise, the Department stands ready to assign problems which would make good thesis material. However, from the standpoint of interest to the student, he is urged to submit his own problem.

MAJOR IN PHYSICS

In order to be qualified to "major" in a subject a student should exhibit proficiency in that subject, and allied subjects, during his under-graduate career.

Students who are planning to work for the degree of Master of Science in Physics should have certain preparation in Mathematics and Chemistry.

By the end of the fourth year such students should have successfully completed the following:—

(A) Mathematics 1, 4, 10, 21, 22, 105.

(B) Chemistry 23 and 27 or Chem. 25.

(C) Physics 35, 36, (or its equivalent), Physics 101, 102, 103, 104, 105, 106, 107, 108.

During the fifth or graduate year the student will be allowed some choice of the following courses, namely, Physics 201, 202, 203, 204, 205, 206, 207, 208, 209, 210.

Physics 300 should be carried on throughout the graduate year.

MINOR IN PHYSICS

(A) Those students working for Master of Science in Chemistry and minoring in Physics: by the end of the fourth year such students should have shown proficiency in Math. 1, 4, 17, 18; Physics 31, 32, 33, 34 (or their equivalent), 109, 110, or 104, 105.

During the fifth year such students may take Physics 101, 106, 107, or 108.

(B) Those students working for Master of Science in Mathematics and minoring in Physics: by the end of the fourth year such students should have shown proficiency in Mathematics 1, 4, 17, 18, (or their equivalent); Physics 33, 34, (or their equivalent), 104, 105; Chemistry 25.

During the fifth year such students may take Physics 101, 102, 103, 106, 107, 108.

Students included in the above two groups should confer with the Head of the Department before their Sophomore registration in order to receive advice in planning their course.

DEPARTMENT OF POLITICAL SCIENCE

Professor MAXIMO M. KALAW, Head; Associate Professor BERNABE AFRICA, Assistant Professors QUIRINO AUSTRIA, MARIA LANZAR-CARPIO; Instructor, BARTOLOME A. UMayAM.

Political Science 2; *CONSTITUTIONAL HISTORY*.—A rapid survey of the growth of constitutionalism in Great Britain, the United States, Spain, and the Philippines; prescribed in the first year of the Preparatory Law Course.

3 hours a week (Class); first semester, credit 3 units.

Political Science 3; *AMERICAN GOVERNMENT*.—A study of the government and politics of the United States. Prescribed in the second year of the Preparatory Law Course.

3 hours a week (Class); first semester, credit 3 units.

Political Science 4; *PHILIPPINE GOVERNMENT*.—A course dealing with the organization and workings of Philippine government and politics.

Textbook, lectures, and assigned readings. Prescribed in the first year of the Preparatory Law Course.

3 hours a week (Class); second semester, credit 3 units.

Political Science 5; *ORIENTAL GOVERNMENTS AND POLITICS*.—A survey of the governments of Japan and China and the whole Far-Eastern Situation. Prescribed in the second year of the Preparatory Law Course.

3 hours a week (Class); second semester, credit 3 units.

JUNIOR HOUSE OF REPRESENTATIVES.—Practice in parliamentary law, debating, and legislation. Prescribed in the second year of the Preparatory Law Course.

1 hour a week (Class); throughout the year, credit 2 units.

Political Science 6; *EUROPEAN GOVERNMENTS*.—A study of the fundamental organization of the principal European governments. Prescribed in the second year of the Preparatory Law Course.

Prerequisites: Political Science 2.

3 hours a week (Class); second semester, credit 3 units.

Political Science 102; *MUNICIPAL GOVERNMENT*.—An investigation of the various methods by which modern cities and towns are administered with special reference to conditions in the Philippines.

Prerequisites: Social Science 1 and 2, Political Science 3 and 4.

3 hours a week (Class); first semester, credit 3 units.

Political Science 104; *DIPLOMACY*.—By arrangement.

3 hours a week (Class); credit 3 units.

Political Science 202; *FAR-EASTERN RELATIONS AND POLITICS*.—A general survey of the international situation in the Far East. A historical research into the earliest relations between the various Oriental Countries themselves, and between them and the Occidental countries. The opening up of China, Japan, and Korea, and the colonization of India by Great Britain. The origin and present development of foreign consular jurisdiction in China, international settlements, customs control and spheres of influence, and paramount interests of the powers in the Orient. A careful study of the various international agreements and conventions affecting the status of China, Korea, and the Malayan countries; International barriers. The progress of China. The position of the Philippines in the Far East. The Orient in the European War and the Paris Conference. The future of Oriental nationalities. The Pacific Conference

and topics of current interest. Lectures and outside readings. By arrangement.

3 hours a week (Class); second semester, 3 units.

Political Science 203; *HISTORY OF POLITICAL THOUGHT*.—By arrangement.

3 hours a week (Class); credit 3 units.

Political Science 204; *PROBLEMS IN MUNICIPAL GOVERNMENT*.—An advanced course dealing with activities and problems of municipal and city governments in Europe and in America, and their application in the Philippines.

Prerequisite: Political Science 102.

3 hours a week (Class); second semester, credit 3 units.

Political Science 206; *CURRENT POLITICAL PROBLEMS*.—A course dealing with the current political problems especially of the Philippines and the Far East.

2 hours a week (Class); both semesters, credit 2 units each semester.

Political Science 207; *COLONIAL GOVERNMENT*.—A study of the self-governing and non-self-governing colonies of the world, and the past and present colonial policies of the great powers.

3 hour a week (Class); second semester, credit 3 units.

Political Science 208; *HISTORY OF DIPLOMACY*.—A course dealing with the development of international intercourse.

2 hours a week (Class); first semester, credit 2 units.

Political Science 209; *AMERICAN-PHILIPPINE RELATIONS*.—By arrangement.

2 hours a week (Class); both semesters, credit 2 units each semester.

2 hours a week (Class); credit, 2 units.

Political Science 210; *SEMINAR IN POLITICAL SCIENCE*.—Report and discussion by faculty or students on current questions in government administration, international and constitutional law. Also the study and examination of scientific literature.

2 hours a week (Class); both semesters, credit 2 units each semester.

Political Science 300; *THESIS*.—Required of all candidates for the M.A. degree specializing in Political Science.

(The following courses in the College of Law are also open to students of the Senior College on obtaining special permission. Administrative Law, 3 hours, second semester, 3 units; Public Corporations, 2 hours, first semester, 2 units. Constitutional Law, 3 hours, second semester, 3 units; Comparative Law, 2 hours each semester, 2 units each semester; Jurisprudence, 2 hours first semester, 2 units; Legal History, 2 hours, second semester, 2 units; Legal Philosophy, 2 hours, second semester, 2 units.)

INTRODUCTION TO SOCIAL SCIENCE

Dean MAXIMO M. KALAW, Chairman; Dean BENITEZ; Professors TOWNSEND, ALZONA, and CASTILLEJO.

This course is given by the College of Liberal Arts with the coöperation of the College of Education. The coöperating departments are Political Science, Philosophy and Psychology, Anthropology and Sociology, History, Economics, Education, and Library Science.

Social Science 1 and 2; *INTRODUCTION TO SOCIAL SCIENCE*.—An introductory course required of all students of the Colleges of Education, Liberal Arts and Engineering, conducted jointly by the Departments of Political Science, History, Anthropology, Economics, Education, Library Science, and Philosophy.

Social Science 1; *INTRODUCTION TO SOCIAL SCIENCE (FIRST PART)*.—Work in the first part takes up man's relation with nature, his traits, peculiarities, and ideals, and the historical background of present civilization, with emphasis on the cultural development.

3 hours a week (Lectures and Class) both semesters, credit 3 units.

Social Science 2; *INTRODUCTION TO SOCIAL SCIENCE (SECOND PART)*.—This course, which should follow Social Science 1, introduces the student to elementary problems in political science and economics, and discusses the fundamental economic, educational and political questions of the Philippines, with special emphasis on the political development of the people and their relations with the United States.

3 hours a week (Lectures and Class) both semesters, credit 3 units.

DEPARTMENT OF SPANISH

Professor DE VEYRA, (Head); Assistant Professors MARAVILLAS and TEOTICO; Instructors, DIZON, VELARDE-BUENAVENTURA, BORJA and OCAMPO.

Spanish 10; *ELEMENTARY SPANISH*.

Spanish 11; *ELEMENTARY SPANISH*.—A study of the elements of the Spanish language, with reading and exercises in conversation and composition.

Textbook: Moreno-Lacalle's *Elementos de Español*.

The two courses of one semester each, constitutes a year course, with credit of 6 units divisible into two semestral courses of 3 units each.

Prerequisite for Spanish 11; Spanish 10.

3 hours a week (Class); credit, 3 units either semester.

Spanish 12; *INTERMEDIATE SPANISH*.

Spanish 13; *INTERMEDIATE SPANISH*.—Spanish grammar; reading, conversation and composition.

Courses as in Elementary Spanish.

Prerequisites: Spanish 10 and 11, or its equivalent. For Spanish 13; Spanish 12.

Textbook: F. T. D.'s *Gramática Española* (tercer grado), según los principios de la Real Academia; Alvarez-Quintero's *La Flor de la Vida*, and Morley's *Spanish Humor in Story and Essay*.

3 hours a week (Class); credit, 3 units, either semester.

Spanish 103; *ADVANCED SPANISH*.

Spanish 104; *ADVANCED SPANISH*.—Advanced Spanish composition and introduction to Spanish Literature; history of Spanish Literature before the Golden Age.

Prerequisites: Spanish 12 and 13.

Either course can be taken separately in each semester.

Textbook: Rizal's *Noli Me Tangere* for Spanish 103, and *El Filibusterismo* for Spanish 104. For both sections, R. Blanco's *Elementos de Literatura Española*.

Reference books: Salcedo-Ruiz's *La Literatura Española* and Cejador's *Historia de la Lengua y Literatura Castellana*.

3 hours a week (Class); credit, 3 units either semester.

Spanish 201; *THE GOLDEN AGE OF SPANISH LITERATURE*.

Spanish 202; *THE GOLDEN AGE OF SPANISH LITERATURE*.—The work comprises mainly the reading of the classics of this period, with particular emphasis on Cervantes, Lope de Vega, Tirso de Molina and Calderon de la Barca, and the study of "cultism" and "conceptism." (Senior College course.)

Prerequisites: Spanish 12 and 13.

Textbooks: Fitzmaurice-Kelly's *Historia de la Literatura Española* and Agusti's *Modelos de Literatura Castellana*.

Reference books: Salcedo-Ruiz's *La Literatura Española* and Cejador's *Historia de la Lengua y Literatura Castellana*.

3 hours a week (Class); credits 3 units either semester.

DEPARTMENT OF ZOOLOGY

Associate Professor and Head, Dr. HILARIO A. ROXAS; Assistant Professor Dr. LEOPOLDO S. CLEMENTE; Instructors, Dr. FELIX

V. SANTOS, Mr. JOSE S. DOMANTAY, Dr. AMADO T.

FELICIANO, Assistants, Miss LUCIA A. MANIKIS,

Miss CARIDAD MORENTE, Miss ARSENIA

URQUICO, Miss ANGELA DE LA PAZ,

Mr. JOSE V. YAP-CHIONGCO.

Zoölogy 1; *INTRODUCTION TO ZOOLOGY*.—Introduction to general principles of the subject. Prerequisite for all courses in the Department except for Zoölogy 3, and 16.

9 hours a week (6 Lab., 3 Class); one semester, credit 5 units.

Zoölogy 3; *BIOLOGICAL PROBLEMS IN ENGINEERING*.—A brief course treating the biological problems involved in construction, water supply, sewerage, and sanitation.

1 hour a week (Class); one semester, credit 1 unit.

Zoölogy 16; *GENETICS, EUGENICS, AND EVOLUTION*.—A cultural course dealing with the history and principles of Genetics and Evolution. Open to all students without previous training in zoölogy. Lectures, readings, and class recitations.

3 hours a week (Class); one semester, credit 3 units.

Zoölogy 21; *COMPARATIVE ANATOMY AND PHYLOGENY OF VERTEBRATES*.—Organs and systems and their phylogeny will be traced through various groups of vertebrates from a morphological and physiological point of view. Required course for the students intending to study medicine. Others will be admitted.

Prerequisite: Zoölogy 1.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 24; *SYSTEMATIC ZOOLOGY*.—A general systematic survey of the animal kingdom and study of morphology, physiology, and distribution of animals. Training in classification and general and special methods of collecting and preserving animals. Primarily for Education students. Others will be admitted.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 103; *PARASITOLOGY*.—Designed for students interested in general parasitology. Discussion of subject matter from a biological point of view including principles, origin and degrees of parasitism, structural peculiarities of parasites, and effects of parasitism on the host and parasite. The laboratory work will cover the taxonomy, morphology and general physiology of parasites.

Prerequisite: Zoölogy 21 or 24.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 104; *ENTOMOLOGY*.—A study of structure, function, interrelation, development, life history, and classification of Arthropods with special emphasis on insects and their allies. Methods of collecting, mounting, and preparing materials for study are taken up. Beneficial and injurious ones affecting plants, animals, and man, and their control measures are also studied.

Prerequisite: Zoölogy 24 or its equivalent.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 105; *GENERAL EMBRYOLOGY*.—Morphology and Physiology of development of invertebrates. Formation of germ cells, maturation, fertilization, germ layers, and origin of embryo. Process of development in common invertebrates. Embryological theories and technique.

Prerequisite: Either Zoölogy 21 or 24, or their equivalents.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 106; *VERTEBRATE EMBRYOLOGY*.—Study of the process and theories of development of vertebrates. Common vertebrate animals will be used for laboratory work.

Prerequisite: Either Zoölogy 21 or 24, or their equivalents.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 107; *FIELD WORK*.—Collection of animals in the field and study of collected material in the laboratory. Special attention is paid to easily accessible animals for class work and individual study. Methods of collecting and preserving the animals for future use. Required of students who take Bachelor of Science with major in Zoölogy.

Prerequisite: Zoölogy 24 or Zoology 21 or their equivalents.

Hours and credit to be arranged.

Zoölogy 108; *EXPERIMENTAL ZOOLOGY*.—Conferences and experimental work on general embryology, morphogenesis and physiology of animals. The nature of the work will depend largely upon the material available. This can be taken in place of Zoölogy 107 as a requirement for graduation of those who take Bachelor of Science with zoölogy major.

Prerequisite: A thorough knowledge of Zoölogy and permission of the instructor in charge. Given at Puerto Galera.

Summer, credit 6 units.

Zoölogy 112; *MICROSCOPIC TECHNIQUE*.—A course giving instruction and practice in the preparation of materials for microscopic examination. Practice in fixing, staining, and mounting tissues and organisms.

Prerequisite: Zoölogy 21 or 24, or their equivalents.

One semester, hours and credits to be arranged.

Zoölogy 115; *INTRODUCTION TO GENERAL PHYSIOLOGY*.—A theoretical and experimental consideration of fundamental problems of physiology.

Prerequisite: A satisfactory training in Biology or Chemistry.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 116; *GENETICS AND EUGENICS*.—Breeding experiments, lectures, recitations, and reports. *Drosophila* Mice, Protozoa and Crustaceans used as experimental animals.

Prerequisite: Either Zoölogy 24 or 105, or their equivalents. Optional, Zoölogy 16 and Botany 101.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

Zoölogy 200; *CURRENT ZOOLOGICAL LITERATURE*.—Reports and discussion on selected topics from the current Zoölogical or allied literature. Primarily for graduate students, but open to all others interested in Biological sciences.

1 hour a week (Class); each semester, credit 1 unit.

Zoölogy 201; *THEORETICAL ZOOLOGY*.—A critical review of classic and contemporary literature on more important problems: Organism as a whole, reproduction, senescence and rejuvenescence, heredity, sex determina-

tion, hormone action, etc. Lectures, recitations, and reports on original literature. Primarily for graduates in Zoölogy. In special cases, others may be admitted.

Throughout the year, 3 hours a week (3 Class) ; credit 3 units a semester.

Zoölogy 215; *RESEARCH*.—Students who have had sufficient preparation will be assigned to research work. Each semester. Hours and credit to be arranged.

Zoölogy 300; *MASTER'S THESIS*.

School of Business Administration

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Dean of the College of Liberal Arts: Dr. MAXIMO M. KALAW.

Director of the School: Prof. CONRADO BENITEZ.

Secretary of the School: Mr. PIO G. DE CASTRO.

BUSINESS DIRECTORY

OFFICE OF THE DIRECTOR AND THE SECRETARY: Room 215,
Second Floor, Rizal Hall, Padre Faura St., Manila, P. I.

TELEPHONE CONNECTION: Tel. 5-69-21, Local 43.

CORRESPONDENCE: Address all communications to the Director,
School of Business Administration, University of the Philippines,
Manila, P. I.

FACULTY

CONRADO BENITEZ, Ph.B., M.A., LL.B.

Director, School of Business Administration

Professor and Head, Department of Economics

LUIS R. SALVOSA, A.B., Graduate, U.S. Mil. Academy (West Point),
M.S., Sc.D.

Professor of Insurance and Statistics

MARIANO D. GANA, M.A., LL.B., LL.M., D.C.L.

Associate Professor of Economics

JOSE P. APOSTOL, A.B., B.S.C., M.A.

Assistant Professor of Economics

FERMIN FRANCISCO, A.B., B.C.S.

Assistant Professor of Trade and Transportation

PEDRO A. SANTIAGO, A.B., Ph.B., M.S., C.P.A.

Assistant Professor of Accounting

LINO J. CASTILLEJO, A.B., M.A.

Professorial Lecturer on Economics

*Superintendent, Collegiate Instruction, Commissioner of Private
Education*

MARCIANO GUEVARRA, LL.B., C.P.A.

Professorial Lecturer on Government Accounting

Manager, Dept. of Disbursement Audits, Bureau of Audits

EMETERIO ROA, A.B., M.S., Sc.D.

Professorial Lecturer on Insurance

*Actuary, Filipinas Insurance Co. and Insular Life Assurance Co.,
Ltd.*

MANUEL S. RUSTIA, B.S.C., M.B.A.

Professorial Lecturer on Foreign Trade

*Formerly Commercial Attaché of the Philippine Government in New
York*

LOUIS JOSEPH FRANCISCO,

Special Professorial Lecturer on Sales

Sales Manager and Secretary, Pacific Commercial Company

GEORGE L. MaGEE, A.B.

Special Professorial Lecturer on Advertising and Publicity

Advertising Manager, Pacific Commercial Company.

JOHN F. MANGELS

Special Professorial Lecturer on Sales Promotion

In charge of Sales Promotion, Pacific Commercial Company

E. E. WHITE, A.B.

Professorial Lecturer on Banking and Accounting

Accountant, National City Bank of New York (Manila)

ALFREDO B. BENEDICTO, B.S.C., C.P.A.

Instructor in Accounting

PIO G. DE CASTRO, B.C.S., M.B.A., M.A.

Instructor in Business Administration and Economics

BELEN ENRILE-GUTIERREZ, B.S.C., M.S.C., C.P.A., M.S.

Instructor in Accounting

MIGUEL ROMUALDEZ, Jr., B.S.C., M.S.

Instructor in Economics

ARTEMIO L. TULIO, A.B., B.S.C., C.P.A.

Instructor in Accounting

EUSTAQUIO G. AQUINO, A.B., M.A., Ph.D.

Lecturer on Economics

Researcher, Legislative Reference Division, National Library

ANDRES V. CASTILLO, Ph.B., M.S., Ph.D.

Lecturer on Economics

ARSENIO J. JISON, A.B., M.A.

Lecturer on Banking

Assistant Manager, Foreign Department, Philippine National Bank

ABDON LLORENTE, A.B., S.B.

Lecturer on Trade and Finance

Formerly Commercial Attaché of the Philippine Government in New York

EXEQUIEL S. SEVILLA, B.S.C., M.S., A.C.A.S.

Lecturer on Statistics

Actuarial Examiner, Bureau of Treasury

ESTABLISHMENT

The School of Business Administration, upon recommendation of President Rafael Palma, was officially established by a resolution of the Board of Regents at the meeting held on March 22, 1929.

Since 1916, however, the establishment of a course in commerce leading to the degree of bachelor of science had been authorized by the Board, and the first graduates were turned out in 1918.

This action of the Board was in response to a demand for well-trained and capable Filipino business executives and for a complete professional training in business administration comparable to that in law, medicine, engineering, and the other professions. It was also taken in recognition of the fact that the basic principles of business administration can be taught much more effectively and quickly than the usual apprenticeship method of the past by utilizing the accumulated experience of the masters in business and improving upon them by the processes of scientific research.

PURPOSE

It is, therefore, the aim of the School of Business Administration to give its students, in addition to the traditional college education, a professional training for the practical work of business administration in its various branches. It does not attempt to prepare students in clerical and similar occupations as employees, but to lay a solid foundation on which successful careers in managerial and administrative positions, and as proprietors, may be built.

CURRICULUM

The curriculum of this School is based upon the theory that the major work of practical business administrators lies essentially in the investigation, analysis, and solution of business problems concerning policy, organization, and operation. It is believed the students of business administration must first have a rounded knowledge of the fundamentals of physical and social sciences to afford them a broad outlook on their problems before they are thoroughly grounded in the theory, technique, functions, procedure, and the problems of internal and external relations of business enterprises.

To state it in another way, the outstanding functions of the modern business administrator are concerned with his relationship with the physical environment, production, market, personnel, finance, risk and risk-bearing, social environment, and the coherent control of activities arising from the foregoing relationships.

While a great majority of the courses given by the School are developed from the standpoint of the general executive, the opportunity for specialization in the various functions of the business organization has not been lost sight of, because it is believed that most of the students of the School possess the ambition to run business enterprises of their own or to serve some business organizations with the hope of ultimately becoming departmental managers.

1. *Regular undergraduate and graduate courses.*—The School of Business Administration offers undergraduate and specialized graduate courses leading to the degrees of Bachelor of Science in Business Administration, Master of Science in Business Administration and Master of Arts in Economics. The B.S.B.A. degree is conferred upon the satisfactory completion of a four-year course of undergraduate study. The M.S.B.A. and the M.A. in Economics degrees are conferred upon the satisfactory fulfillment of all the requirements prescribed by the School and the Committees on Graduate Studies. For further particulars concerning graduate work, inquire from the Secretary. See also general information about GRADUATE STUDY.

2. *C.P.A. Course.*—Advanced and special summer review courses in Accountancy and Commercial Law are also given for the benefit of those who would like to take the Government examinations for Certified Public Accountants which is given in the month of June every year.

3. *Business and Economic Teaching.*—The School of Business Administration also accepts responsibility, not only for training future business managers, but also for training teachers of business and economic subjects in secondary schools, colleges and universities. Ordinarily, the training of teachers of business and economics for colleges and universities involves graduate work.

ADMISSION

For rules of the School regarding entrance requirements, methods of admission, procedure in registration, rules on attendance, scholarship and graduation, see page 10 and following pages, or inquire from the Secretary.

FEES

The following are the total fees ¹ charged for both regular undergraduate and graduate courses each semester:

<i>Undergraduate</i> ^a		<i>Graduate</i> ^b	
1st. Semester First Year	Succeeding Semesters	1st. Semester First Year	Succeeding Semesters
P62.50	P42.50	P72.50	P52.50

¹ This includes the deposit of P15.00 which will be refunded to the student upon his separation from the University.

^a P2.00 per unit of credit is charged for undergraduates who carry less than full load but not exceeding fifteen units.

^b Graduate students carrying less than full load a semester pay (1) P15 for thesis or five clock hours of work or less a week, (2) P30 for more than five clock hours but not exceeding 10, and (3) P40 for more than 10.

METHODS OF INSTRUCTION

Instruction in the School consists mainly of class-room discussion with written reports upon specific cases or problems assigned for investigation, supplemented with lectures by experts on technical subjects. Emphasis is laid upon the "case system" as the accepted best method for business training. Frequent visits to industrial and commercial establishments and points of economic interest in Manila and the different places of the Islands also form an important part of business instruction. With these methods of teaching, it is believed that students will come in contact with actual economic conditions and business operation and develop their power of analysis, thus preparing themselves for positions of responsibility.

It is also the policy of the School to individualize the curriculum for each student as much as possible, rather than adhere to rigid courses of study for groups of students. In this way, personal adjustment can be made on the basis of previous training, present ability, and expected future occupation. With this policy, however, of giving to each student individualized instruction according to his ability goes the policy of expecting from each results commensurate with his ability. In all cases each student is helped to improve his methods of study and each is held up to do his best grade of work. To facilitate the administration of this policy, an effort is made to admit no one who will not approach his work in a professional spirit. In other words, the School will always maintain as much as possible the highest standard of work, thus automatically forcing students of poor ability to withdraw from the School.

LIBRARY FACILITIES

The students of the School are afforded unusual opportunities for study and research work by the Business Library of the School, the Main Library of the University, the Library of the Bureau of Science and the National Library, where there are stored invaluable documents and an unusual selection of books on business, economics and related subjects.

BUSINESS CLUB

The Business Club is established primarily for the purpose of promoting the interest of the students in matters of business administration by inviting executives and experts from different lines of business to give special weekly lectures on various topics and to develop such business and social relationships as are essential to business success. Membership to the Club and attendance to lectures are compulsory to all business students.

ACCOUNTING CLINIC

An Accounting Clinic under the charge of a member of the Faculty is maintained by the School for the benefit of students majoring in Accountancy who desire to apply their knowledge into actual work and who may wish to earn extra money for college expenses. For particulars, see the Secretary.

PLACEMENT OF ALUMNI

While it is generally regarded as reputable practice to find employment for business graduates, the School assumes no responsibility for their placement. It should be stated, however, that the School, since its official establishment, receives so many requests for capable graduates that a large number of its alumni secure positions through the assistance of the Office.

FOUR-YEAR CURRICULUM IN BUSINESS ADMINISTRATION

Leading to the degree of Bachelor of Science in Business Administration (B.S.B.A.)

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Units		Units
English 1	3	English 1	3
Spanish 10	3	Spanish 11	3
Science ¹	3	Science ¹	3
Social Science 1	3	Social Science 2	3
Math. 1 (or Accounting 1) ..	3	Accounting 1 (or Math. 1) ..	3
Military Science	1½	Military Science	1½
Physical Education	(2)	Physical Education	(2)
<hr/>		<hr/>	
Total	16½	Total	16½

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Units		Units
Spanish 12	3	Spanish 13	3
Mathematics 2	3	Accounting 110	3
Accounting 2	3	Accounting 3	3
Economics 11	3	Economics 15 (or Econ. 110)	3
Business English 35	3	Economics 16	3
Military Science	1½	Military Science	1½
Physical Education	(1)	Physical Education	(1)
<hr/>		<hr/>	
Total	16½	Total	16½

THIRD YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Units		Units
Banking 120 (or Econ. 121)	3	Banking 121	3
Business Law 138	3	Business Law 139	3
Business Adm'n. 130	3	Economics 160	3
Business Statistics 140	3	Elective ²	3
Elective ²	3	Elective ²	3
Physical Education	(1)	Physical Education	(1)
<hr/>		<hr/>	
Total	15	Total	15

FOURTH YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Units		Units
Business Research 195.....	2	Business Research 195.....	2
Marketing 170	3	Marketing 171	3
Accounting 100	3	Elective ²	3
Elective ²	3	Elective ²	3
Elective ²	3	Elective ²	3
Elective ²	3	Elective ²	3
<hr/> Total		<hr/> Total	
	17		17

¹ For science, Elements of Geography (Geog. 1), Economic Geography (Geog. 101) and Natural Resources of the Philippines (Geog. 105) are recommended.

² Only business and economic subjects are acceptable electives.

N. B.—Students who expect to take up graduate work leading to the degree of Master of Science in Business Administration (M.S.B.A.) should take Economics 12, Business Statistics 141 and Industrial Management 160 and 161 in the elective courses.

COURSES OF INSTRUCTION

NOTE:—Courses numbered from 1 to 99 are primarily for first and second year students.

Those from 100 to 199 are primarily for third and fourth year students. Graduate students duly enrolled in these courses can be granted graduate credits only upon performing extra work.

Courses from 200 to 300 are primarily for graduate students. Fourth year students of unusual ability may take these courses with the previous consent of the Adviser and the Director and receive credits therefor for the bachelor's degree.

All group courses are alphabetically and numerically arranged.

A continuation course cannot be taken without satisfactorily completing the preceding course.

ACCOUNTING

Accounting 1; *INTRODUCTORY ACCOUNTING*.—An introductory course which deal primarily with the fundamental principles of accounting as applied to proprietorship business and correlated with the double-entry bookkeeping practice applicable thereto. Thruout the course the practice set will constitute an important part of the student's homework; supplemented by problems and questions.

Prerequisite to all accounting courses. Required of all business students.

3 hours a week; both semesters; credit 3 units.

Note: For related course, see Economics 13—*ELEMENTS OF ACCOUNTING*.

Accounting 2; *ACCOUNTING PRINCIPLES I*.—Continuation course of Accounting 1, in which accounting principles are applied to single proprietorship and partnership business. The practice set will constitute an important part of the student's homework; supplemented by problems and questions.

Prerequisite to all accounting courses. Required of all business students.

3 hours a week; first semester; credit 3 units.

Accounting 3; *ACCOUNTING PRINCIPLES II*.—A continuation of Accounting 2 in which accounting principles are applied to the manufacturing type of business and the corporate form of organization. Thruout the course the practice set will constitute an important part of the student's homework; supplemented by problems and questions.

Prerequisite to advanced accounting courses. Required of all business students.

3 hours a week; second semester; credit 3 units.

Accounting 6; *PHARMACY ACCOUNTING, BUSINESS ORGANIZATION AND PRACTICE*.—Required of students in the School of Pharmacy. The course treats of the essential principles of accounting and business organization and operation, with special reference to the needs of students of Pharmacy.

2 hours a week; first semester; credit 2 units.

Accounting 100; *ACCOUNTING REPORTS*.—This course is concerned with analyzing the balance sheet, the profit and loss and other operating statements of a business from the internal or managerial point of view, and in general with the control of its finances and operations by means various standards, measurements and records, including not only statement analysis, but such devices as standard costs and budgets.

Prerequisite: Accounting 3. Required of all undergraduate business students.

3 hours a week; first semester; credit 3 units.

Accounting 101; *COST ACCOUNTING*.—A study of cost accounting principles and practice both from the accountant's and the manager's standpoints, emphasis being given to the fact that cost accounting supplies a technique for unit cost determination and a means of executive control which are not necessarily confined to production operation. A number of practical problems and brief business cases intended to test the student's ability are presented for solution.

Prerequisite: Accounting 3.

3 hours a week; first semester; credit 3 units.

Accounting 102; *AUDITING*.—A course covering both the theory and practice of auditing, discussion being supplemented with problems, questions and specimen working papers such as are applicable to balance sheet

audits. From time to time, students will be given assignments to do actual auditing work.

Prerequisite: Accounting 3. Required of students preparing for the C. P. A. Examination.

3 hours a week; first semester; credit 3 units.

Accounting 103; *ACCOUNTING PROBLEMS I*.—A course in the analysis of accounting problems and the application of principles involved, dealing specially with the problems of valuation of the different items of the balance sheets and of the profit and loss statements; distinction between capital and revenue expenditures; the problem of depreciation; determination of cost for inventory valuation; installment accounts; consignments and ventures; branches and agency; special points in partnership and corporation accounts; etc.

Prerequisite: Accounting 3. Required of students preparing for the C. P. A. Examination.

3 hours a week; first semester; credit 3 units.

Accounting 104; *ACCOUNTING PROBLEMS II*.—Continuation of Accounting 103, covering specialized problems in industrial and non-industrial balance sheets and income statements; analysis of surplus; application of funds; causes of variation in net profit; statement of affairs, receivership, executorship and trustee's accounts; realization and liquidation accounts; consolidated balance sheets and consolidated statements of profit and loss.

Required of students preparing for the C. P. A. Examination.

3 hours a week; second semester; credit 3 units.

Accounting 110; *BUSINESS MATHEMATICS*.—A study of the mathematical principles and operations employed in practical business, specially intended for accountants and financial executives. The course covers the exercises and problems of everyday business calculations; annuities; amortization; sinking funds; building and loan associations; bond valuation; depreciation; perpetuities and capitalization; and reinvestment rates.

Prerequisite: Mathematics 2. Required of business students.

3 hours a week; second semester, credit 3 units.

Accounting 200; *MANAGERIAL ACCOUNTING*.—An advanced course based upon the outlook of the comptroller on the construction, control and interpretation of the accounts of an enterprise for internal use, considerable attention being given to the devices of accounting systems, utilization by the management of financial and operating ratios, study of corporate reports, and organization of the comptroller's department.

Prerequisite: Accounting 102 and preferably Accounting 100, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Accounting 201; *ADVANCED COST ACCOUNTING*.—A critical analysis of advanced cost accounting principles and technique and their prac-

tical application to the cost problems of manufacturing, mercantile and financial establishments.

Prerequisite: Accounting 101.

3 hours a week; second semester; credit 3 units.

Accounting 202; *ADVANCED AUDITING*.—An analysis of the work of the public accountant, with special emphasis on the technical procedure of performing each class of his activities. Actual cases presenting the most recent views of recognized leaders in the profession will be discussed.

Prerequisite: Accounting 102.

3 hours a week; second semester; credit 3 units.

Accounting 203; *ACCOUNTING SYSTEMS*.—A course dealing with the problems encountered in the investigation, construction and installation of accounting systems for various types of financial, merchandising and manufacturing concerns, public service companies, non-profit institutions, and governmental bodies. Considerable time will be given specially to representative accounting systems of building and loan associations, insurance companies, banks, stock brokerage, department stores, gas companies, railroads and municipalities. Problems, field investigation and research into the accounting situation of particular types of businesses are required. Special attention is given to the mechanical preparation of accounting forms and the uses of mechanical equipment.

Prerequisites: Accounting 101 and 104, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Accounting 204; *SPECIALIZED ACCOUNTING PROBLEMS*.—Specialized problems in accounting practice not stressed in other courses, such as actuarial science, fiduciary accounting, foreign exchange accounting, branch-house accounting, accounting for non-profit institutions and governmental bodies, and income tax procedure. Students will be required to investigate and report on selected problems.

Prerequisite: Accounting 104, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Accounting 205; *ACCOUNTING THEORY*.—An intensive study of accounting theory, with special reference to controversial points and the best literature of the field, intended specially for advanced students in accounting.

Prerequisite: Accounting 103 and preferably 104, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Accounting 206; *ADVANCED ACCOUNTING PROBLEMS I*.—A critical analysis of practical accounting problems, auditing and theory of accounts and the application of accounting principles, special attention being given to C. P. A. methods of examination and the solution of C. P. A. problems of previous years.

Prerequisites: Accounting 101, 102 and 104, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Accounting 207; *ADVANCED ACCOUNTING PROBLEMS II*.—Continuation of Accounting 206.

3 hours a week; second semester; credit 3 units.

C. P. A. Review in *ACCOUNTING* and *AUDITING* theory and practice and *COMMERCIAL LAW* are given expressly for those who intend to take the C. P. A. Examination in the month of June every year. The courses cover practically the same subject-matters as those of Accounting 205, 206, 207 and Business Law 200 but the work is done more intensively and rigorously.

3 hours a week each; April and May; no credits.

Note: For related courses, see

Business Law 138—139—*BUSINESS LAW I—II*

Business Law 200 —*GENERAL BUSINESS LAW*

ACTUARIAL SCIENCE

Actuarial Science 110; *INSURANCE*.—A survey course of the underlying principles, nature and uses of various forms of contracts, types of insurance carriers, principles of insurance law, and state regulation of insurance. The more important types of life, fire, marine and casualty insurance are discussed. (For students who do not expect to take specialized insurance courses.)

3 hours a week; second semester; credit 3 units.

Actuarial Science 111; *CASUALTY INSURANCE*.—An analytical study of the development of employers' liability, workmen's compensation and its insurance, compensation insurance organizations, contracts, rates and rating, and reserves. Other leading forms of casualty insurance are also considered. Not open to students who have received credit in Actuarial Science 110.

3 hours a week; first semester; credit 3 units.

Actuarial Science 112; *LIFE INSURANCE*.—A study of the economic and legal aspects of the principles and practice of life insurance. Especially valuable to insurance salesmen. Not open to students who have received credit in Actuarial Science 110.

3 hours a week; second semester; credit 3 units.

Note: For related course, see

Banking 122—*RISK AND RISK-BEARING*

Actuarial Science 210; *ADVANCED MATHEMATICAL THEORY OF INTEREST AND LIFE CONTINGENCIES I*.—A detailed study of life annuities and assurances, the construction of premiums for varying benefits, methods of loading net premiums, theory of policy values and various methods and plans or reserve valuation, theory of dividends, total and permanent disability benefits, and double indemnity.

Prerequisite: Theory of Probability (Math. 112) and Finite Differences (Math. 113).

3 hours a week; first semester; credit 3 units.

Actuarial Science 211; *ADVANCED MATHEMATICAL THEORY OF INTEREST AND LIFE CONTINGENCIES II*.—Continuation of Actuarial Science 210.

3 hours a week; second semester; credit 3 units.

BANKING AND FINANCE

Banking 120; *BANKING AND BUSINESS*.—A course in banking practice and its relation to industrial and commercial operations viewed from the standpoint of the borrower, emphasis being made especially on the subject of domestic and foreign financing, banking systems and bank legislation. The course is introduced with a discussion of elementary principles of money, credit and exchange, investments, and the organization and operation of commercial and investment banks.

Required of all business students.

3 hours a week; first semester; credit 3 units.

Banking 121; *FINANCIAL MANAGEMENT*.—This course deals with the principles and practice involved in the financial problems and operation in a going concern organization, considerable time being given to the discussion of the executive's financial policies, methods and practice in raising capital, development of internal organization and procedures for control of financial activities, the development of financial standards, the legal and financial phases of corporate promotion and reorganization, and the relations of financial organization to business administration.

Prerequisite: Banking 120, or its equivalent. Required of all business students.

3 hours a week; second semester; credit 3 units.

Banking 122; *RISK AND RISK-BEARING*.—This course deals with the examination of the nature and significance of the many uncertainties of our economic organization and studies the methods, devices and institutions which have evolved to aid individuals and society in dealing with risks. Particular attention is given to risks of business management, investment and those risks taken care of by insurance organizations. Emphasis is given to the analysis of methods and devices available for use by business executives in forecasting probable future events and of the functions, operations and problems of risk-bearing institutions, such as the speculative exchanges, guaranty companies, and insurance companies, in relation to financial administration.

3 hours a week; first semester; credit 3 units.

Note: For related courses, see

Actuarial Science 110—*INSURANCE*

Actuarial Science 111—*CASUALTY INSURANCE*

Actuarial Science 112—*LIFE INSURANCE*

Banking 123; *CREDITS AND COLLECTIONS*.—A study of the organization, operation and management of the credit and collection departments of manufacturing, mercantile and financial establishments, con-

siderable attention being given to the investigation and analysis of credit risks, analysis and interpretation of financial statements and other credit reports, credit terms, methods of protecting receivables, relationship of sales and financial administration to the credit and collection departments, collection systems and methods, the legal and business relationships of debtor and creditor, the major problems of credit and collections and the tests of the credit and collection department's efficiency.

Prerequisite: Banking 120, or its equivalent.

3 hours a week; second semester; credit 3 units.

Banking 124; *BANKING PRACTICE*.—A thoro and critical analysis of the practical operation of the various departments of a bank, including loans, discounts and collections; elements of bank accounting; examination of banks; relations with other banks and with the central reserve systems.

Prerequisite: Banking 120, or its equivalent.

3 hours a week; first semester; credit 3 units.

Banking 125; *INVESTMENT BANKING*.—A detailed discussion of the functions and operation of non-commercial banking institutions—trust companies, savings banks, private banks and investment houses and other investment credit institutions. The principles and technique of long-period banking credit, as contrasted with those of short-term commercial lending, the methods of the investment bank and of commercial financial institutions, and the policies and problems concerned therewith will be carefully analyzed.

Prerequisite: Banking 120, or its equivalent.

3 hours a week; first semester; credit 3 units.

Banking 126; *BANKING SYSTEMS*.—A comparative study of the structure of the banking systems of the leading countries of the world, especially of the United States, the United Kingdom and her self-governing dominions, France, Italy, Germany, the Scandinavian countries, Japan and China. Emphasis will be laid on the types of commercial and investment credit instruments in use in the several countries; the development of credit institutions; the operation and functions of commercial banks; the financing of domestic and foreign trade; the money rates; the amalgamation movement; and recent tendencies in banking. Comparison of banking technique and organization in the Philippines and in the foreign countries studied will also be discussed.

Prerequisite: Banking 120, or its equivalent.

3 hours a week; first semester; credit 3 units.

Banking 220; *CORPORATION FINANCE I*.—An advanced course dealing with the financial problems of the modern business corporation of considerable size which center largely upon corporate promotion, financial planning, financial administration, expansion, failure and reorganization. Intensive readings and reports on assigned topics are required.

Prerequisite: Banking 121, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Banking 221; *CORPORATION FINANCE II*.—Continuation of Banking 220. Special stress will be given to the discussion of actual cases to bring out clearly the important points in the financial technique and policies of corporations.

3 hours a week; second semester; credit 3 units.

Banking 224; *BANK MANAGEMENT*.—An intensive course dealing with the problems and policies which come to the general executives or departmental managers of a commercial bank. A critical study is made of the administrative problems of banking, executive organization, inter-bank relationships, selection of business, relations with depositors, analysis of accounts, problems of directorates, adaptation of bank functions to requirements of local community, distribution of credit among borrowers, management of investments, discount policies, etc.

Prerequisite: Banking 124, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Banking 225; *MORTGAGE BANKING*.—A study of long-term credit and investment operations in connection with the development of land and permanent improvement or construction enterprise; comparative analysis of the rural credit and mortgage banking systems of the leading countries of the world as contrasted with the systems now in process of development in the Philippines; city mortgage banking, including title insurance and allied topics, real estate bond issues, methods of distribution and urban land finance in general.

Prerequisite: Banking 125, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Banking 226; *CENTRAL RESERVE BANKING*.—A comparative study of the central reserve banking systems of the world; their origin, history and present-day operation. The chief banking charters and acts are analyzed for the purpose of developing any underlying principles which might be found to control the central banks of the several countries and the conservation of reserve funds. Special attention is given to rediscount and open-market powers of central banks; the issuance of notes; and the development of the discount market in each country and to the conditions underlying the international discount market. Considerable time will be devoted to the problems of credit control. Recent changes in banking and currency resulting from the war and the organization and functions of the Bank of International Settlements will be analyzed.

Prerequisite: Banking 126, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Banking 227; *INTERNATIONAL BANKING*.—A critical analysis of the methods of financing foreign trade and foreign enterprises; short-and-long-term credits; relations with foreign branches and correspondents; comparison between methods of Philippine and foreign banks; government borrowing; foreign short-term finance; etc.

Prerequisite: Banking 120, or its equivalent.

3 hours a week; first semester; credit 3 units.

Note: For related courses, see

Economics 121—*MONEY, CREDIT AND BANKING PRINCIPLES*

Economics 170—*AGRICULTURAL ECONOMICS*

Economics 171—*LAND ECONOMICS*

Economics 180—*INTERNATIONAL TRADE AND TARIFF*

Economics 220—*ADVANCED MONEY AND BANKING*

Economics 270—*AGRICULTURAL AND LAND ECONOMICS*

Economics 280—*INTERNATIONAL TRADE FINANCE*

Economics 281—*INTERNATIONAL ECONOMIC POLICIES*

Real Estate 190—*REAL ESTATE PRACTICE*

BUSINESS ADMINISTRATION

Business Administration 130; *BUSINESS ADMINISTRATION I*.—An extensive and searching analysis of the pervasive and interdependent problems confronting management today and the technique and methods the most progressive executives and firms are using to handle them effectively. The complicated factors which make up the raw material and the machinery of modern business management are carefully considered and discussed. In the light of today's changing conditions money, markets, men, machines, materials, and management methods are each analyzed in turn and their intricate relations and interrelations brought out under today's actual working conditions. The course presupposes a thoro knowledge of economic principles and problems.

Required of all undergraduate business students.

3 hours a week; first semester; credit 3 units.

Business Administration 131; *BUSINESS ADMINISTRATION II*.—Continuation of Business Administration 130, stress being given to a critical analysis of the technique of managerial control and the advanced problems of business organization and administration.

3 hours a week; second semester; credit 3 units.

Business Administration 132; *PERSONNEL MANAGEMENT*.—An intensive study of the new philosophy, technique, and problems of human administration in industry. The factors and conditions which give rise to modern labor problems are critically studied first, followed by an analysis of the organized methods of dealing with these problems. From the point of view of the manager of an industrial enterprise special attention is given to the constituent elements in the labor policy and to the administrative machinery required to give the labor policy effective application.

Prerequisite: Business Administration 130 or Industrial Management 160, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Note: For allied courses, see—

Economics 150—*LABOR PROBLEMS*

Economics 250—*LABOR MOVEMENTS*

Economics 251—*LABOR LEGISLATION*

Business Administration 133; *OFFICE MANAGEMENT AND SECRETARIAL PRACTICE*.—An intensive course in the study and practical

application of scientific management principles and technique to the administrative problems of the modern office, followed by instruction in the fundamentals of secretarial practice. Considerable time will be given to the procedure of office organization and the analysis of managerial problems of the office; standardization of office work, physical conditions, equipment and materials, methods, and personnel; and the methods of management control.

Prerequisite: Business Administration 130 or Industrial Management 160, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Business Administration 230; *BUSINESS POLICY I*.—An advanced course which aims to correlate and coordinate the work given in the specialized courses, to show the interdependence between different functional departments of business, to suggest the solution of problems affecting the general policy of an operating company, and to correlate business problems with the history and theory of economics. Consideration is given to such topics as: the changing approach to industrial problems, role of industry in prosperity and depression, size of business unit, overhead costs, competition, over-production, over-investment, analytical study of industries and companies, industrial combination, the law in its industrial application, taxes and regulation in industry, international aspects of industry, and the relations between manufacturing, banking, and commercial enterprises.

A thoro knowledge of the general principles of economics, business administration and industrial management is presupposed. Intensive research on special topics will be required.

Required of all graduate students in business administration.

3 hours a week; first semester; credit 3 units.

Business Administration 231; *BUSINESS POLICY II*.—Continuation of Business Administration 230. The course considers the policies of various large corporations as they may relate to diversification, competition, over-capacity, employee relations, etc.; major changes in a company's policy and their influence upon the industry in which the company operates, or the possible effects of these changes on other industries; the external factors which have caused a company to change its policies; the coordination of business policies with general economic conditions, as well as with the developments within the industry; the problems of the general executive in coordinating production, finance and distribution; the causes of maladjustments in individual business and in selected industries; the marketing and economic aspects of recent mergers; methods of attacking some unsolved problems in distribution; and in all cases special attention is given to the effects of basic economic factors upon broad business policies.

Required of all graduate students in business administration.

3 hours a week; second semester; credit 3 units.

BUSINESS ENGLISH

Business English 35; *BUSINESS ENGLISH*.—An intensive course in the use of correct and forceful English for business purposes and the writing of effective business letters. Emphasis will be given, from the executive's standpoint, to the study of the technique and procedure of the subject and the methods of influencing and directing the recipient to take the desired action. Considerable practice will be given in writing all forms of business letters and reports.

Required of all undergraduate business students.

3 hours a week; first semester; credit 3 units.

Business English 136; *BUSINESS LETTER WRITING*.—A thoro and practical training in the technique and composition of effective business letters, with some discussion of tendencies in present-day business correspondence and the problems of management which arise in connection with correspondence.

Prerequisite: Business English 35.

3 hours a week; second semester; credit 3 units.

BUSINESS ETHICS

Business Ethics 137; *BUSINESS ETHICS*.—A course dealing with the ethical principles and problems involving the self-regulatory functions of business: the development of business knowledge and integrity, commercial arbitration, association and corporation policies, and the elimination of trade abuses and unsound promotion schemes. Open only to senior and graduate students.

3 hours a week; second semester; credit 3 units.

BUSINESS LAW

Business Law 138; *BUSINESS LAW I*.—INTRODUCTION TO THE STUDY OF BUSINESS LAW; LAW ON MARKET PRACTICES, FINANCING, AND RISK-BEARING. The first part of the course is designed to develop the technique of analyzing and evaluating legal decisions; the technique of using law books; and a working knowledge of fundamental legal concepts, such as capacity, agency, contract, and property.

The second part deals with market transactions, such as bailments, pledges, and sales; with the legality of market practices from the point of view of competitors and of the public; law on finance treats of the legal aspects of devices for getting money and credit; of the legal aspects of devices for securing creditors; and of the rights of creditors; and the law on risk-bearing is a study of the legal aspects of devices, such as speculative and insurance contracts, for shifting risks incidental to business; and of limitations upon the shifting of risks.

Required of all undergraduate business students.

3 hours a week; first semester; credit 3 units.

Business Law 139; *BUSINESS LAW II.—LAW ON LABOR, BUSINESS ASSOCIATIONS, AND PUBLIC CONTROL OF BUSINESS THROUGH STATUTES.* The law on labor treats of the legal relation between employer and employee; of practices in the bargaining struggle between employer and employee; of modern preferential labor legislation. The law on business associations deals with the nature and characteristics of the various form of business associations recognized by law, such as the relation of principal and agent, the partnership and the corporation; with the control of various forms of business associations; with the incidents of membership in the various forms of business associations. Public regulation of business through statutes and administrative control is devoted to a consideration of problems confronting the business man under laws designed to aid, regulate, or prohibit certain economic activities. Consideration is given to the distribution of powers among the branches of the government, and to limitations placed upon each in its regulation of business. Policies and administrative machinery of the government are studied in relation to labor, finance, production, marketing, risks and risk-bearing, transportation and communication, and business associations.

Prerequisite: Business Law 138.

Required of all undergraduate business students.

3 hours a week; second semester; credit 3 units.

Note: For related subject see economics 130—*BUSINESS AND GOVERNMENT.*

Business Law 200; *GENERAL BUSINESS LAW.*—A comprehensive survey course in business law, designed specially for those preparing for the C.P.A. examination.

Prerequisite: Consent of the Instructor.

3 hours a week; second semester; credit 3 units.

BUSINESS STATISTICS

Business Statistics 140; *BUSINESS STATISTICS I.*—An intensive study in the principles and technique of statistical analysis with special application to business problems. The course begins with an analysis of scientific method, followed by a consideration of the methods of collecting, appraising, and interpreting statistical data in their application to concrete problems. Among the subjects discussed are statistical units, tabulation, graphics, averages, index numbers, measures of dispersion, skewness, and correlation as they apply both to time and frequency series. Laboratory work is an integral and important part of this course.

Prerequisite: College Algebra (Mathematics 1) and preferably Economic Principles (Economics 11 and 12).

Required of all business students.

3 hours a week; first semester; credit 3 units.

Business Statistics 141; *BUSINESS STATISTICS II.*—A continuation course of Business Statistics 140 dealing with a thorough analysis of time series in their relation to the business cycle. It is concerned

with the statistical methods which may be and are used in discovering, describing, and measuring business changes, rather than with a description of the business cycle. It begins with a detailed study of the methods of making and interpreting index numbers of prices, passing them to a consideration of the methods of isolating secular, seasonal, and cyclical changes in individual series of data and of combining them into integrated barometers and forecasters. Special reports are required on the methods used by the leading statistical and forecasting agencies of the world.

3 hours a week; second semester; credit 3 units.

Note: For related course, see Economics 14—*ELEMENTS OF STATISTICS*.

Business Statistics 142; *ELEMENTARY MATHEMATICAL THEORY OF STATISTICS I*.—This course deals with the elementary theory and applications of mathematical statistics, treating in detail averages, dispersion, skewness, sampling, and correlation.

Prerequisite: College Algebra, (Mathematics 1) and preferably Algebra, Trigonometry and Analytical Geometry (Mathematics 11 and 12).

3 hours a week; first semester; credit 3 units.

Business Statistics 143; *ELEMENTARY MATHEMATICAL THEORY OF STATISTICS II*.—Continuation of Business Statistics 142 covering: regression lines and planes, simple and multiple correlation, growth curves, and the general application of the theory developed in Business Statistics 142 and 143 to miscellaneous practical problems.

3 hours a week; second semester; credit 3 units.

Business Statistics 240; *MANAGERIAL STATISTICS*.—An intensive study of the practical application of statistical and graphic methods of control of the problems presented in the administration of the business enterprise. Actual cases dealing with: the control of sales, stores and production; the formation of a purchasing policy; market analysis; the measurement of operating efficiency; the analysis of expenses, etc., are discussed and criticized. A certain amount of laboratory and field work will be required each week.

Prerequisite: Business Statistics 140 and 141, or its equivalent, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Business Statistics 242; *ADVANCED MATHEMATICAL THEORY OF STATISTICS I*.—A critical study of averages, coefficients of dispersion and skewness, and the theory of sampling, leading to general developments of laws of error and the theory of frequency distribution.

Prerequisite: Business Statistics 143, Calculus I and II (Mathematics 21 and 22)

3 hours a week; first semester; credit 3 units.

Business Statistics 243; *ADVANCED MATHEMATICAL THEORY OF STATISTICS II*.—Continuation of Business Statistics 242 including a study of the methods of graduating frequency series as developed by

Pearson and Charlier, the higher characteristics of frequency distribution, the theory of probable error, and the theory of correlation.

3 hours a week; second semester; credit 3 units.

ECONOMICS

Note: Economics 11, 12, 13, 14, 16, and 17 are required of all students majoring in Economics. Unless otherwise stated, all economic courses numbered from 100 upward are open only to students who have passed Economics 11 and 12.

Economics 11; *ECONOMIC PRINCIPLES I*.—An elementary but comprehensive course consisting of an analysis and description of the existing economic structure of society, an examination both of orthodox economic principles and of modern economic development and their application to actual economic issues of national or international concern.

Required of all economics and business students. *Not open to freshmen.*

3 hours a week; both semesters; credit 3 units.

Economics 12; *ECONOMIC PRINCIPLES II*.—Continuation of Economics 11. Primary emphasis will be placed on the application of economic principles to current economic problems of public significance.

Required of all economics and business students.

3 hours a week; both semesters; credit 3 units.

Economics 13; *ELEMENTS OF ACCOUNTING*.—A comprehensive survey course on the fundamental principles of general accounting, cost accounting, and auditing, especially designed to acquaint economics students of this special type of the quantitative method of analysis and measurement peculiarly adapted for controlling the finances of an economic enterprise. The chief work of the course deals with the construction and interpretation of public and private financial statements. Instruction will be given mainly thru problems and laboratory practice. No credit for business students.

Required of all economics students. (May be taken at the same time with Economics 11 or 12).

3 hours a week; first semester; credit 3 units.

Note: For related subjects, see courses in Accounting.

Economics 14; *ELEMENTS OF STATISTICS*.—A study of the elementary principles of statistics as applied in the scientific study and interpretation of economic and social phenomena. The subject will be developed from the non-mathematical point of view. The topics considered include the general characteristics of the statistical method, the definition of statistical units, accuracy and approximation, the nature and causes of error, classification, frequency distributions and frequency curves, the several forms of average and their approximate uses, rates and percentages, index numbers and business barometers, the tabular and graphic presentation of statistical results, and the collection of original statistical

material. Some consideration will be devoted also to the economic application of the various methods and the solution of assigned problems.

Required of all economics students.

3 hours a week; second semester; credit 3 units.

Note: For related subjects, see courses in Business Statistics.

Economics 15; *AMERICAN ECONOMIC HISTORY*.—A study of the economic history of the United States from the period of colonial settlement to the present time, with emphasis on conditions since 1860, origin and growth of leading American industries, changes in industrial organization, commercial policies, influence of economic conditions on political history, problems of expansion, the World War and recent economic tendencies.

3 hours a week; second semester; credit 3 units.

Economics 16; *PHILIPPINE ECONOMIC HISTORY*.—A study of the economic history of the Philippines from the earliest times prior to its discovery and conquest by the Spaniards up to the present with special emphasis on conditions since 1900. The aim is to show the student in what way and to what extent economic forces have determined the history and progress of the country.

Required of all economics and business undergraduate students.

3 hours a week; second semester; credit 3 units.

Economics 17; *ECONOMIC INSTITUTIONS AND IDEAS*.—A historical survey of the development of modern economic institutions and ideas.

Prerequisite: Economics 11 and 12.

Required of all economics students.

3 hours a week; second semester; credit 3 units.

Economics 100; *PRICE AND DISTRIBUTION*.—A critical analysis of the principles governing the relative prices and values of commodities and the forces governing the distribution of the product of industry among the factors of production. (An advantageous introduction to Economics 101.)

Prerequisite: Open only to seniors and graduates, or with consent of instructor.

3 hours a week; first semester; credit 3 units.

Economics 101; *ECONOMIC RECONSTRUCTION*.—A comparative analysis of the various radical programmes of economic and social reforms, such as liberalism, socialism, communism, anarchism, single tax and facism.

Prerequisite: Open only to seniors and graduates, or with consent of instructor.

3 hours a week; second semester; credit 3 units.

Economics 110; *EUROPEAN ECONOMIC HISTORY*.—A comprehensive survey course of the origin and the more important economic changes and achievements in Europe since the sixteenth century up to the present

day. Substantial discussion is given to the three leading countries: namely, the United Kingdom of Great Britain and Ireland, France, and Germany.

3 hours a week; first semester; credit 3 units.

Economics 119; *ORIENTAL ECONOMIC HISTORY*.—A critical study of the economic history of the neighboring countries of the Philippines, particularly Japan and China, special attention being given to major economic causes and policies responsible for their industrial and commercial progress.

3 hours a week; second semester; credit 3 units.

Economics 121; *MONEY, CREDIT AND BANKING PRINCIPLES*.—A critical analysis of the theories, problems, and policies concerning money, credit, and banking systems and operations, considerable time being devoted to a discussion of the feasibility of control of fluctuation in prices, and the value of money. The history and system of currency and banking in the Philippines will also be covered by assigned readings.

3 hours a week; first semester; credit 3 units.

Note: For related subjects, see courses in Banking and Economics 220—

ADVANCED MONEY AND BANKING

Economics 130; *BUSINESS AND GOVERNMENT*.—A critical study of the relations between the public and public service corporations; the necessity of regulation and the various methods of control; the development of the principles of valuation, rate-making, service, and capitalization; government ownership, the relations between government and private business; the proper scope of regulation and its constitutional and legal aspects; regulation of competition; control of corporations and trusts; government promotion and encouragement of business; elements of a national policy towards business.

3 hours a week; second semester; credit 3 units.

Note: For related subjects, see courses in Business Law, Public Utility and Transportation.

Economics 140; *TRANSPORTATION ECONOMICS*.—A study of the history and economics of land, water, and air transportation with special stress upon the problems of rates, finance, and legislation—both domestic and foreign.

3 hours a week; first semester; credit 3 units.

Note: For related subjects, see courses in Public Utility and Transportation

Economics 150; *LABOR PROBLEMS*.—A general survey of the background, activities, and problems of the labor movements in Europe, America, Philippines and other Pacific countries, particular attention being given to the structure, methods and policies of union organizations; the

nature, significance, fundamental causes and effects of industrial conflicts; and the various remedial measures proposed for their effective control.

3 hours a week; first semester; credit 3 units.

Note: For related subjects, see

Economics 250—*LABOR MOVEMENTS*

Business Administration 132—*PERSONNEL ADMINISTRATION*

Economics 160; *GOVERNMENT FINANCE*.—An analytical study of public expenditures and the commercial and administrative revenues of government, the principles and methods of taxation, existing tax systems, a historical and critical treatment of the various proposals for tax reform, the problems of public credit, financial legislation and administration.

3 hours a week; first semester; credit 3 units.

Economics 170; *AGRICULTURAL ECONOMICS*.—An analytical study of the economic forces and conditions which determine the prosperity of agriculture as an integral part of the national life, particular attention being given to the business problems of the production and marketing of farm products, to prices and the economic forces and conditions which determine the share of the national income received by farmers, the government's agricultural policy, and the prospect of Philippine agriculture.

3 hours a week; first semester; credit 3 units.

Economics 171; *LAND ECONOMICS*.—An analytical study of the economic characteristics of land, the spatial element in land, the relation of land to the law of population, the economic principles underlying the private utilization and conservation of land, land income or rent, land valuation, ownership and tenure, credit, investment in land, special stress being given to the study, both historical and critical, of the land problems and land policies in the Philippines.

3 hours a week; second semester; credit 3 units.

Economics 180; *INTERNATIONAL TRADE AND TARIFF*.—A historical and critical study of the underlying theoretical bases of international trade, the commercial policies of modern nations, the technique of tariff making and its administration, the principles and mechanism of international payments, and a historical examination of the literature of international trade from Adam Smith and Ricardo to contemporary writers, special consideration to be given to the problems of Philippine trade relations with foreign countries particularly the United States.

3 hours a week; first semester; credit 3 units.

I. ECONOMIC THEORY AND METHOD

Economics 201; *ADVANCED ECONOMIC THEORY*.—An advanced study of economic principles, with special emphasis upon the logical technique of economic theory and upon the relations of theory to practice. Class discussions are based upon cases and selections from leading economists, from Adam Smith to contemporary writers. The principal sub-

jects studied are production, prices, profits, international trade, taxation, labor problems, and government regulation.

3 hours a week; first semester; credit 3 units.

Economics 202; *HISTORY OF ECONOMIC THOUGHT*.—A critical survey of the origin and development of economic doctrines from ancient times to the nineteenth century, emphasis being given to the analysis and discussion of representative authors of the different schools of economists, especially the Classical, Austrian, Marxian, Historical, and the Modern Institutional.

3 hours a week; first semester; credit 3 units.

Economics 203; *VALUE AND DISTRIBUTION*.—A historical, critical and constructive analysis of the theories of value and distribution as developed by Adam Smith, Ricardo, John Stuart Mill, Jevons, Menger, von Wieser, Böhm-Bawerk, Hobson, J. B. Clark, Marshall, and other later economists, with a view to disclosing the basis of existing divergencies and the reformulation of economic doctrines.

Prerequisite: Economics 201 and preferably Economics 202 also, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Economics 209; *CONTEMPORARY ECONOMICS*.—A comparative and critical study intended to give the student familiarity with the main lines of criticism of the classical economists and a thorough working knowledge of the international trend of economic thought today in its relation to political and social conditions, including also some training in methods of non-statistical research. The works of the leading contemporary economists of the principal countries of the world will be carefully analyzed and discussed.

Prerequisite: Economics 202, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

II. ECONOMIC HISTORY

Economics 210; *ADVANCED EUROPEAN ECONOMIC HISTORY*.—A comparative study of the historical foundations and development of the contemporary economic organizations of European countries and their dominions; analysis of elements and national peculiarities. Considerable time will be devoted to the discussion of recent events of economic,

Prerequisite: Economics 17 and 110, or equivalents, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Economics 212; *ADVANCED ORIENTAL ECONOMIC HISTORY*.—A comparative and critical study dealing in great detail with current problems confronting Oriental countries in their economic development.

Prerequisite: Economic 119, or equivalent, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

III. APPLIED ECONOMICS

A. Money and Banking

Economics 220; *ADVANCED MONEY AND BANKING*.—A critical examination of the relation of the value of money to the price level, the principles governing the operations of individual commercial banks and of banking systems, their relation to changes in the price level and business conditions, the feasibility of control of economic activities thru the monetary system, and the outstanding issues in international finance, currency, and banking reforms.

Prerequisite: Economics 121, or equivalent, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Note: For related subjects, see advanced courses in Banking.

B. Government and Business

Economics 230; *GOVERNMENT REGULATION AND OWNERSHIP*.—An analytical study of the financial as well as the general economic and social significance and results of governmental control and regulation of private business and of publicly owned industries in the leading countries. Methods and laws will be analyzed, and the conflict between economics and politics noted. Attention will be given to the rulings of commissions and the decisions of the courts on questions of rates, valuation, capitalization, profits, labor, politics, law, administration, etc.

Prerequisite: Economics 130, or consent of the instructor

3 hours a week; first semester; credit 3 units.

C. Labor Economics

Economics 250; *LABOR MOVEMENTS*.—This course deals primarily with the development of trade unionism and trade union policy, the co-operative movements, the political labor movement, theories of industrial relations, labor legislation, social insurance, and labor problems of the war and reconstruction period in the leading industrial countries of the world and the Philippines.

Prerequisite: Economics 150, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Economics 251; *LABOR LEGISLATION*.—A comprehensive survey and critical analysis of the underlying principles, administration and problems of labor legislation in the leading countries of the world and the Philippines, particular attention being given to the rise, causes, settlement, and prevention of labor disputes; the legal questions and legislative policies arising therefrom; the regulation of employment problems by government action; the actual administration of labor legislation and the significance of labor legislation as a solution to labor problems.

Prerequisite: Economics 250, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

D. Transportation Economics

See the following courses:

Public Utility 180.—*TRAFFIC MANAGEMENT*

Public Utility 280.—*ADVANCED TRANSPORTATION AND TRAFFIC MANAGEMENT*

E. Government Finance

Economics 260; *TAXATION*.—A critical and comparative study of the modern theory and practice and the problems of raising public revenues by taxation, special consideration being given to the Philippine tax system and procedure.

Prerequisite: Economics 160, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

F. Agricultural and Land Economics

Economics 270; *AGRICULTURAL AND LAND PROBLEMS*.—A critical and constructive study of the current problems and policies of major importance in the field of agricultural and land economics of the Philippines and foreign countries.

Prerequisites: Economics 170 and 171, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

G. International Economics

Economics 280; *INTERNATIONAL TRADE AND FINANCE*.—An advanced course dealing with the economic, financial and political aspects of the theories and problems of international values, the mechanism of adjustment of international balances, international gold movements, foreign exchange theories, tariff theory and the reparations transfer problem.

Prerequisite: Economics 180, and preferably Economics 121 also, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Economics 281; *INTERNATIONAL ECONOMIC POLICIES*.—A critical examination of the basic economic, political, legal, and cultural factors in national and world economy, the structural and industrial basis of international relations, the problems and policies involved in international commerce, transportation and finance, as well as a brief survey of the agreements and organization found in the modern structure of world economy.

Prerequisite: Economics 180 and preferably Economics 280 also, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Note:—For allied courses see—

Foreign Trade 150—*FOREIGN TRADE PRINCIPLES*

Foreign Trade 250—*EXPORT SALES MANAGEMENT*

Foreign Trade 251—*IMPORTING*

Public Utility 280—*ADVANCED TRANSPORTATION AND TRAFFIC MANAGEMENT*Banking 227—*INTERNATIONAL BANKING**H. Economic Research*

Economics 290; *SPECIAL STUDIES IN ECONOMICS*.—Special studies in economic theory, economic history and applied economics specially designed for graduate students who may desire to investigate certain problems or pursue further studies not within the scope of formal courses.

Prerequisite: Consent of the instructor.

3 hours a week; either semester; credit 3 units.

Note: For related subject, see Research 295—*SPECIAL STUDIES IN ORGANIZATION AND ADMINISTRATION*

Economics 300; *ECONOMIC RESEARCH*.—A course in research methodology and the writing of the Master's dissertation. In compliance with the requirements of the University Graduate Committee, all candidates for the degree of Master of Arts in Economics must present a satisfactory dissertation on a subject approved by the Head of the Department, by the Advisers, and the Committees on Graduate Studies. Before proceeding with their research, however, graduate students are required to familiarize themselves with the methodology of research under the proper guidance of their respective Advisers. *The dissertation must show an original treatment of the subject, or give evidence of independent research, and must also be in good literary form and suitable for publication.* For full particulars regarding graduate work in economics, inquire from the Secretary and see also the description elsewhere regarding GRADUATE STUDY.

Meeting by arrangement; thruout the year; credit 10 units.

FOREIGN TRADE

Foreign Trade 150; *FOREIGN TRADE PRINCIPLES*.—A fundamental course on the general principles, technique and practical work of present-day exporting and importing. The discussion centers around the general principles of international commerce, general promotion of foreign trade, export and import trading organization, financial practice in foreign trade, foreign trade methods and technique, and foreign trade documents.

Prerequisite: Marketing 170 and 171 and preferably Banking 120 also.

3 hours a week; first semester; credit 3 units.

Foreign Trade 250; *EXPORT SALES MANAGEMENT*.—An advanced study dealing with the current methods, technique and problems of exporting which are essentially the same as those of sales management modified by the fact that the buyers are located in foreign countries and subject to influences and environments different from those in this country. The course considers the major policies of business concerns with respect to export trade; the methods and problems involved in the organization and operation of the export department; research and its uses as a basis for selling operations; analysis of export policies, such as those relating to

production, distribution and price; methods of selling in foreign markets, advertising, personal salesmanship, selection of agencies and representatives, and the selection and management of the export sales-force; financial methods from the point of view of the exporter; the problems of delivery of goods to foreign buyers; and the methods of control of export operations.

Prerequisite: Foreign Trade 150, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

Foreign Trade 251; **IMPORTING**.—An advanced course dealing with the practical methods, technique and general problems of purchasing goods from foreign countries. After dealing with the general economics of importing, the discussion will center around the procedure and problems concerning the organization and operation of import houses; the transactions involved, including the purchase of goods overseas, the inspection, packing, marking, and shipping from the other side; the procedure gone thru in passing merchandise thru the customs; the distribution and consumption in the home market; foreign control of raw materials and methods of meeting such control. Thruout the emphasis is laid upon customs procedure and the practical work of importing by tracing the different methods followed in handling the transactions connected with several characteristic commodities.

Prerequisite: Foreign Trade 150, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

INDUSTRIAL MANAGEMENT

Industrial Management 160; *INDUSTRIAL MANAGEMENT I*.—This course aims to train students in sound organization and management principles and policies governing effective production and engineering procedure in the modern manufacturing enterprise and in the scientific methods of approach to administrative and executive problems related to it. After an introductory study of the evolution and significance of modern industrial management, the discussion takes up the problems of the legal and executive forms of organizations, plant location, design and construction of buildings, selection and arrangement of equipment, procurement of materials, labor requirements and wages, labor relations and policies, services of functional specialists, production control methods, and the uses of cost accounting. Thruout emphasis is given to the technique, methods and policies of managerial control. The course presupposes a thoro knowledge of economic principles and problems.

3 hours a week; first semester; credit 3 units.

Industrial Management 161; *INDUSTRIAL MANAGEMENT II*.—Continuation of Industrial Management 160, special emphasis being given to the current problems of industrial management and the study of the literature, development and practice of scientific management in the leading industrial countries of the world.

3 hours a week; second semester; credit 3 units.

Industrial Management 260; *FACTORY MANAGEMENT*.—An intensive course in the technique of control of factory operations. Consider-

able time is given to the study of production control in its engineering and management aspects, of industrial costs as a measure of success of all manufacturing operations, and some of the important lines of machinery used in selected industries which are considered in the aspects that they present to the manufacturer. Investigation and reports on the conditions and operations of local factories are required thruout the course.

Prerequisite: Industrial Management 161, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Industrial Management 261; *MANUFACTURING PROBLEMS*.—An intensive course dealing with the analysis of such industrial problems as are important in the determination of financial and distributive policies of manufacturing enterprises. Consideration will also be given to the problems of economic control of industrial engineering and manufacturing. The work requires field research and intensive reading in the advanced features of management.

Prerequisite: Industrial Management 260, or consent of the instructor.

3 hours a week; second semester; credit 3 units.

MARKETING

Marketing 170; *MARKETING I*.—The object of the course is to familiarize students with the methods of marketing merchandise and to give them training in the analysis of typical selling problems in a wide variety of industries and trades which call for the formation of sound policies. After an introductory study of markets from the functional and institutional viewpoints, the course considers the methods of marketing consumers' goods; consumers' buying habits and motives; types, methods, and cost of retail distribution; methods and costs of wholesale distribution by merchants and manufacturers; methods of marketing industrial goods; the analysis of typical problems of selling policy, including sales management, brands, trade-marks, and advertising policies, merchandising, sales promotion, and price policies.

Required of all business students.

3 hours a week; first semester; credit 3 units.

Marketing 171; *MARKETING II*.—Continuation of Marketing 170, with special emphasis to marketing problems and policies.

Required of all business students.

3 hours a week; second semester; credit 3 units.

Marketing 172; *SALESMANSHIP*.—An intensive course in the basic principles, methods and practice of effective selling. Considerable attention will be devoted to a study of the functions of the salesman and his place in the marketing organization; an analysis of products, market structure and methods; the development of the basic elements of a successful sales personality; preparation of the sales canvass; the personal sales process; and service to customers. Students will be given extensive training in sales practice both inside and outside the classroom.

3 hours a week; second semester; credit 3 units.

Marketing 173; *ADVERTISING*.—An intensive course in the fundamental principles of advertising, the methods of representative advertisers, and the problems of advertising generally encountered by business executives. Thru a series of problems and readings, special emphasis will be given to the place and function of advertising in business administration and the more important elements of technique in order to develop the student's ability critically to judge advertisements.

Prerequisite: Marketing 171, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Marketing 270; *SALES MANAGEMENT I*.—By means of discussion of specific problems, field investigations and extensive readings, this course aims to give a broad view of the important phases of sales administration, planning, and execution, as applied to manufacturing and wholesale concerns. It deals specifically with the structure and functioning of the sales organization and the correlation of its activities with those of the production and other departments of the business enterprise. After taking up the introductory general problems relating to the various phases of sales management, a study is then made of merchandising and merchandising policy, sales research and market analysis, distribution policies, prices and terms of sale, sales planning and sales promotion, sales methods and sales campaigns. Thruout special emphasis is given to the study of sales management technique and policies.

Prerequisite: Marketing 171, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Marketing 271; *SALES MANAGEMENT II*.—Continuation of Marketing 270, devoted to a discussion of the problems, technique and policies connected with the sales organization, management of the salesforce, filling and delivery of orders, and the control of sales operations.

3 hours a week; second semester; credit 3 units.

Marketing 272; *RETAIL STORE MANAGEMENT I*.—This course aims to develop the principles, methods and policies of retail distribution and store management thru an intensive study of representative cases. Typical problems are presented in the management of department stores, chain stores, specialty stores, and other types of retail enterprise, but emphasis necessarily is given to the more highly developed forms of retailing. This part covers such topics as the elements of retail profit, types of retail institutions and types of merchandise, store location, store layout and merchandise classification, merchandising, pricing, relations with merchandise sources, organization, and general policies.

Prerequisite: Marketing 171, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Marketing 273; *RETAIL STORE MANAGEMENT II*.—Continuation of Marketing 272, including such topics as advertising, display, sales promotion, money control, unit control, bases of sales and stock planning, determination of purchase limits, buying, merchandise organization, salesforce management, personnel, methods of wage payment, receiving and

marketing, methods of handling cash and authorizing credit, expense classification, expense distribution, expense budgeting, financial problems, and general management problems and policies.

3 hours a week; second semester; credit 3 units.

PUBLIC UTILITY AND TRANSPORTATION

Public Utility 180; *TRAFFIC MANAGEMENT*.—A course dealing with the organization and functioning of those departments of industrial concerns which administer transportation problems, emphasis being given to the investigation and critical analysis of transportation and traffic management problems in the Philippines.

3 hours a week; first semester; credit 3 units.

Public Utility 280; *ADVANCED TRANSPORTATION AND TRAFFIC MANAGEMENT*.—A comparative study of the organization, operation and administration of the various types of transportation facilities and traffic management problems, consideration being given especially to their economic, legal and political aspects.

Prerequisite: Public Utility 180.

3 hours a week; second semester; credit 3 units.

Public Utility 285; *PUBLIC UTILITY OPERATION AND MANAGEMENT*.—An intensive study of the technical basis and background of the public utility industries and their operating and administrative problems. After an introductory study of the economic and legal characteristics of each public utility and the methods of government regulation on matters of valuation, depreciation, and fair return, considerable time is then devoted to the discussion of the methods and problems of marketing and sales management, public relations, advertising, production and finance peculiar to these industries.

Prerequisite: Economics 230 or equivalent, or consent of the instructor.

3 hours a week; first semester; credit 3 units.

Note: For related subject, see Economics 140—*TRANSPORTATION ECONOMICS*

REAL ESTATE

Real Estate 190; *REAL ESTATE PRACTICE*.—An intensive course in the principles and practice of real estate business, with special emphasis to its procedural, legal and managerial aspects.

3 hours a week; second semester; credit 3 units.

RESEARCH

Research 195; *UNDERGRADUATE BUSINESS RESEARCH*.—A research course primarily intended for seniors, which aims to give special training in the scientific technique and procedure of investigating business problems and the preparation of business reports. Special emphasis will be given to field work.

2 hours a week; thruout the year; credit 4 units.

Required of all senior students.

Research 295. *SPECIAL STUDIES IN ORGANIZATION AND ADMINISTRATION*.—Special studies of certain phases of business organization and management, in theory and practice, designed particularly for graduate students who may desire to investigate some problems or pursue further studies not within the scope of formal courses in the School of Business Administration.

Prerequisite: Consent of the instructor.

3 hours a week; either semester; credit 3 units.

Note: For related subjects, see Economics 290—*SPECIAL STUDIES IN ECONOMICS*

Research 300. *GRADUATE BUSINESS RESEARCH*.—A required course for all graduate students who are preparing their Master's dissertation on duly approved problems of business administration in compliance with the requirements of the School and the Committees on Graduate Studies. Research work must be carried out under the close supervision of the Advisers officially designated for the purpose or of some members of the faculty formally delegated by the Director and shall involve not less than the equivalent of twelve and half to fifteen hours of actual work a week for the entire year. Before starting on the research work, graduate students are required to familiarize themselves with the methodology of business research and the mechanics of preparing the dissertation. *The nation and originality, analytical power and good judgment, in the constructive solution of problems of business administration and in the interpretation of the results of his research.* (For particulars, consult the Secretary and the general information on GRADUATE STUDY elsewhere in this catalog.)

Meeting by arrangement; thruout the year; credit 10 units.

The Junior College of the University of the Philippines
Cebu, Cebu, P. I.

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA
Dean of the College: Dr. JOSE S. REYES
Registrar: Prof. JULIO E. PONGAN
Collecting, Disbursing, and Property Officer: Mr. JULIAN BATIQUIN

CHAIRMEN OF STANDING COMMITTEES

Admission: Prof. JULIO E. PONGAN
Athletics: Mr. SALUSTIANO VIOLANDA
Building and Grounds: Mr. CLODOVEO SORIANO
Catalogue: Prof. HARRIET L. RICHARDS
Curriculum: Prof. CANUTO O. BORROMEO
Library: Mr. NICANOR ZARATAN
Military Science: Lieut. PASTOR MARTELINO
Schedule: Miss SALUD M. RAFOLS
Scholarship: Prof. JULIO E. PONGAN
Student Activities: Miss ADELA DEL ROSARIO
Student Welfare: Mrs. ROBERTA S. FILOTEO

BUSINESS DIRECTORY

OFFICE OF THE DEAN: The Office of the Dean is located on the second floor of the Junior College Building, Lahug, Cebu City.

Telephone Connections: Dean's Office, Tel. 165; Registrar's Office, Tel. 315

CORRESPONDENCE: Address all correspondence to the Dean, Junior College of the University of the Philippines, Cebu, Cebu.

FACULTY OF INSTRUCTION

JOSE S. REYES, M.A., Ph.D.

Dean and Professor of Political Science

CANUTO O. BORROMEIO, B.S.M.E.

Professor of Mathematics and Physics

HARRIET L. RICHARDS, B.A.

Assistant Professor of English

PAUL REIM, Ph.D.

Assistant Professor of French and German

SOFRONIO BALCE, B.S., M.S.

Assistant Professor of Chemistry

JULIO E. PONGAN, B.S.E.

Registrar and Assistant Professor of History and Philosophy

PASTOR MARTELINO, 1st Lt., P.S., C.A.C., 92nd Ca (PS)

Assistant Professor of Military Science and Tactics

PACIENTE S. VILLA, B.A.

Assistant Professor of Spanish

ROBERTA SANDALO-FILOTEO, B.S., M.S.

Instructor in Zoology

JUAN A. CABANOS, B.S.E., M.A.

Instructor in Education

JOSE C. CENIZA, B.S.C.

Instructor in Economics

CLODOVEO SORIANO, B.S.M.E.

Instructor in Mathematics and Physics

ADELA DEL ROSARIO, B.S.E.

Instructor in Education

EMILIO VELAZQUEZ, Ph. C.

Instructor in Botany

NICANOR ZARATAN, B.S.E.

Instructor in Library Science and Librarian

SALUD M. RAFOLS, B.S.E.

Instructor in Psychology

SALUSTIANO VIOLANDA

Instructor in Physical Education

ISABEL VELOSO-BALCE, Ph. C.

Assistant in Chemistry

FRANCISCO NEMENZO, B.S.

Assistant in Zoology

The Junior College of the University of the Philippines, Cebu

SHORT HISTORICAL SKETCH

The Board of Regents in June, 1918, authorized the establishment of the Junior College of Liberal Arts in Cebu as a branch of the College of Liberal Arts. In November of the same year, it was made a separate College of the University, and in July, 1922, its official title was changed to the Junior College of the University of the Philippines. Since the college year 1929-1930, the Junior College has been housed in a substantial and commodious building of its own, located in Lahug, a beautiful suburb of the City of Cebu.

AIM

The Cebu Junior College offers college education under three favorable conditions: namely, (a) the student is not far removed from the home-like environment to which he was accustomed in his high school days; (b) he gets more individual attention from his instructors because the classes are generally smaller than those in a big College or University; (c) he enjoys pleasant relations with the students, and with the faculty members.

COURSES OFFERED

Commerce—first two years.
Education—first two years.
General—first two years.
Preparatory Law—two years.
Preparatory Medicine—two years.

ENTRANCE REQUIREMENTS

Applicants seeking admission to this college must be graduates of a standard four-year high school recognized by the Secretary of Public Instruction, or must have completed an equivalent education calling for at least 16 units of credit. These applicants must present for entrance the following subjects:

GROUP A

	Units
1. English	5
2. History	2
3. Mathematics	2-½
4. Biology	1
5. Physics or Chemistry	1
Total	11-½

Provided that students entering the College of Engineering must present an additional ½ unit in solid geometry.

GROUP B

To make up the total number of high-school units required for entrance, history, government, botany, zoology, chemistry, physiology, mathematics, language, literature, economics, general science, geography, psychology, pedagogy, agriculture, bookkeeping, business law, domestic science, drawing, manual training, or music may be offered.

Besides, these applicants must take the Type A test to be given for the purpose. This test consists of the following high school subjects:

English	Mathematics
History	Biology
Physics	Intelligence Test

All entrance deficiencies must be made up within one year.

FEES AND DEPOSIT

Tuition fee per semester ₱30.00

Any student who does not carry full load shall pay tuition in accordance with the following schedule: Thesis or 5 clock hours of work or less a week—₱10; more than 5 but not exceeding 10 clock hours—₱20; more than 10 clock hours—₱30.

Entrance fee (paid only once upon first entering)	5.00
Library fee per semester	2.50
Athletic fee per semester	1.50
Medical fee per semester	2.00
Junior Collegian per semester	1.00
Student Council per semester .....	.50

Laboratory Fees:

Chemistry per semester	15.00
Botany, Zoology, per semester	10.00
Physics per semester	5.00
Dropping a subject or changing list of subjects ...	1.00
Unauthorized dropping of subjects (fine)	2.00
Deposit (paid only once upon first entering)	15.00

A fee of ₱5 is charged for late registration.

A fee of ₱5 is charged for change of course.

A fee of ₱10 is charged for each special examination.

EXPENSES OF STUDENTS

Students' expenses in Cebu are much lower than in Manila. Board and lodging vary from ₱10 to ₱30 a month, but much depends on personal taste. Expenses for books vary from ₱20 to ₱40.

FREE SCHOLARSHIPS

A valedictory scholarship with free tuition fee for a period of one academic year is granted to the student highest in rank (valedictorian) graduating from a standard four-year high school, trade school, commercial school, or other private school of the same standing in the Philippines.

A salutatory scholarship with free tuition fee for a period of one academic year, is also granted to the student second in rank (salutatorian) graduating from the schools mentioned in the preceding paragraph.

Formal application for these scholarships should be made in writing before registration, and the application should be accompanied by a certificate signed by the principal or by director of the school from which the applicant has graduated. These scholarships are granted only on condition that the student meets all the requirements for admission to this University.

RULES ON ATTENDANCE

1. The rules on attendance herein laid down shall be followed in all the schools and colleges including the Departments of Military Science and Physical Education.

2. No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean or director of the college concerned; provided, that no student may matriculate in a college or school or enroll in a course later than two weeks after classes begin. A college or school, or department, to meet special conditions, may shorten this period of extension.

3. Any student, who for unavoidable cause, is obliged to absent himself from any college or required university class must obtain an excuse written on U. P. Form No. 97 from his dean or director to be presented to his instructors.

4. Excuses for absence shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

5. Excuses are for time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

6. When the number of hours lost by absence by a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any other scheduled work in one subject for that semester, he shall be dropped from the class roll with a grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

7. Instructors shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

8. A student shall be given a grade of incomplete in a course if he is absent from the final examination, provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of his dean or director.

9. Any student who drops a course or withdraws from a college or school without the approval of his dean or director shall be subject to curtailment of registration privileges. Prolonged leave of absence must be sought by written petition to the dean or director, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired; provided, however, that student granted leave under this clause shall be subject to the scholarship rules of the college or school where he is duly registered. Indefinite leave of absence shall not be granted.

10. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to his dean or director. If the petition is granted the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall file with the dean or director of his college or school. Without such petition and favorable action no record of honorable dismissal will be made.

11. Attendance in the Graduate School shall not be governed by the foregoing rules.

12. Certificates of absences due to illness must be secured from the University physician.

SCHOLARSHIP RULES

I. *Grades*.—Upon completion of a subject a student will be given a final grade of 1, 2, 3, 4, or 5 according to his standing in the class. "1" denotes marked excellence, "2" denotes satisfactory work, "3" denotes passing, "4" denotes condition, "5" denotes failure.

II. *Credits*.—The amount of credit earned for each subject will be given in terms of "units." A credit of one unit represents either one hour of recitation, lecture, or quiz each for seventeen weeks (one academic semester) or three hours of laboratory work a week for one semester.

III. *Grade-point-units*.—For the purpose of expressing the scholastic standing of a student in proportion to the amount of class and laboratory work he does during residence in College, the "grade-point-unit" system is used. For each grade a corresponding number of points is given. They are the following:

<i>Grade</i>	<i>Grade-point</i>
1	6
2	4
3	2
4	0
5	—1

A grade-point-unit is the product of the grade-point multiplied by the corresponding units credit to the course. Thus a student obtaining a grade of 2 in a course with a credit of 3 units will be entitled to 4×3 or 12 grade-point-units.

IV. A regular student is considered to be of good scholastic standing when his average is 2 grade-points.

V. A regular student obtaining an average ranging from one to two grade-points will be given a WARNING.

VI. A student warned in two successive semesters shall be placed on PROBATION.

VII. Any regular student obtaining an average ranging from one-half to one grade-point at the end of the semester shall be placed on PROBATION.

VIII. Any regular student placed on PROBATION for the second time shall be placed on LIMITED REGISTRATION.

IX. Any regular student obtaining an average ranging from above zero to less than one-half grade-point shall be placed on LIMITED REGISTRATION.

X. No student under **LIMITED REGISTRATION** shall be allowed to take more than the equivalent number of units in which he incurs a grade of "4" or "5".

XI. A regular student failing to obtain any grade-point in his total average shall be suspended for one semester.

XII. A special student receiving a grade of "4" or "5" in any one of his subjects shall be suspended until he becomes eligible to regular or irregular student in College.

MAXIMUM LOAD

No student registered in any college or school of the University will be allowed to take more than eighteen non-laboratory units or twenty-one units including laboratory work during each semester, or nine non-laboratory units during each summer: Provided, however, That this rule shall not affect or alter any existing course duly approved by the University Council and the Board of Regents in which more than twenty-one units are required; Provided, further, that during the last semester of his course, a student may take twenty-one non-laboratory units or twenty-four units including laboratory work if he needs the additional units for graduation at the end of such semester.

TITLE

The title of Associate in Arts shall be granted upon the **SATISFACTORY** completion of the two-year work prescribed in any vocational, cultural or preparatory courses offered in this College. For the satisfactory completion of a course, a candidate must obtain a general average of two (2) grade-points.

COURSES OF INSTRUCTION

Courses in Economics, Education, Political Science, Mathematics, Physiography, Accounting, English, French, German, and Spanish are being offered in the evenings from 5:30 on for the benefit of people who are occupied during the day.

BOTANY

Mr. EMILIO VELAZQUEZ

Botany 1: *ELEMENTARY BOTANY*.—Laboratory work, lecture, and recitations covering the essentials of elementary botany, including the morphology and physiology of seed plants, a general survey of the great groups of plants, and subjects of general interest, such as heredity. This course is required of students who are taking the pre-medical course.

Textbook: Brown, *Elementary Tropical Botany*. Laboratory text: Brown, *Laboratory Botany*.

9 hours a week (6 Lab, 3 class); either semester, credit 5 units.

Botany 4: *TEACHER'S COURSE IN BOTANY*.—A beginner's course designed primarily for those Education students who plan to become teachers of biology. During the first semester the general morphology and physiology of plants will be considered. The laboratory work will be largely experimental. During the second semester the subjects studied will include reproduction and heredity; the morphology, classification, and origin of the different groups of plants; disease-production organisms; and the Philippine vegetation. Special attention will be given throughout the course to the collection of materials from the local flora.

Textbook: Brown, A Textbook of General Botany; Brown Laboratory Botany.

9 hours a week (6 Lab, 3 class); throughout the year, credit 5 units each semester.

CHEMISTRY

Assistant Professor SOFRONIO BALCE and Assistant Mrs. ISABEL VELOSO-BALCE.

Chemistry 23: *GENERAL AND INORGANIC CHEMISTRY (Pre-Medical and General Science)*.—A course giving the essentials of elementary general inorganic college chemistry. Both the fundamental principles of the subject and the practical applications to the industries and everyday life are emphasized.

Lecture, recitation, and laboratory work.

9 hours a week (6 Lab, 3 class); throughout the year, credit 10 units.

Chemistry 26: *ORGANIC CHEMISTRY (Chemistry of Carbon Compounds)*.—An introductory course giving the theoretical principles and practical application of synthetic organic chemistry. The general relations between different groups of compounds and the application of general characteristic of each group are emphasized.

Prerequisite: Chemistry 23.

Lecture, recitation, and laboratory work.

9 hours a week (6 Lab, 3 class); throughout the year, credit 10 units.

Chemistry 27: *QUALITATIVE INORGANIC ANALYSIS*.—A systematic qualitative analysis of basic and acidic constituents of compounds, mixtures, minerals, and alloys the composition of which is unknown to the students. Each unknown is considered a practical examination. A course designed primarily for pre-medical students.

Prerequisite: Chemistry 23.

Lecture, recitation, and laboratory work.

9 hours a week (6 Lab, 3 class); second semester, credit 5 units.

ECONOMICS AND ACCOUNTING

Mr. JOSE C. CENIZA

Economics 11. *ECONOMIC PRINCIPLES I* (Old No. Econ. 1).—This subject is intended to give the students of business and social problems a thoro grasp of the principles underlying the structure and activities of modern economic life in order to enable them to apply intelligently sound economic reasoning to its practical affairs. The subject matter covers the statement and interpretation of the principles and the discussion of their application to the problems of production, value-determination, money and prices, the functional and institutional aspects of the distribution of wealth and income, and international economic relations. Required of business students, Second Year.

3 hours a week; first semester; credit 3 units.

Economics 15. *AMERICAN ECONOMIC HISTORY* (Old No. Econ. 3).—This course traces the economic history of the United States from the period of settlement to the present time, with emphasis on conditions since 1865; origin and growth of leading American industries; changes in

industrial organization; commercial policies; influence of economic conditions on political history; problems of expansion. Elective.

3 hours a week; first semester; credit 3 units.

Economics 16. *PHILIPPINE ECONOMIC HISTORY* (Old No. Econ. 2).—This course traces the economic history of the Philippines from the earliest times prior to its discovery and conquest by the Spaniards up to the present. The aim is to show the student in what way and to what extent economic forces have determined the history and progress of the country. Required of business students. Second Year.

3 hours a week; second semester; credit 3 units.

Economics 110. *EUROPEAN ECONOMIC HISTORY* (Old No. Econ. 4).—This course surveys the origins, and explains with some fullness the nature and effects, of a number of the more important economic changes and achievements in Europe since the 16th century up to the present day. Substantial discussion is given to the three leading countries, namely, the United Kingdom of Great Britain and Ireland, France, and Germany. Elective.

3 hours a week; first semester; credit 3 units.

Economics 121. *MONEY, CREDIT AND BANKING PRINCIPLES* (Old No. Econ. 7).—A critical analysis of the theories, problems and policies concerning money, bank credit and prices. Special emphasis is placed upon fundamental principles governing different media of exchange, index numbers, monetary standards, price levels and the value of money in general. Considerable time will also be given to a discussion of the feasibility of control of fluctuations in prices and a sound monetary system. Required of all business students. Second Year.

3 hours a week; second semester; credit 3 units.

Accounting 1. *INTRODUCTORY ACCOUNTING*.—This course is an introduction to the study of accounting intended for the general student of business as well as for the beginning student in accounting. It deals primarily with the fundamental principles of accounting as applied to sole proprietorship business and correlated with the double-entry bookkeeping practice applicable thereto. The subject matter includes: the nature and analysis of business transactions; theory of debits and credits; classification of accounts; the recording of business transactions in books of accounts; the taking of a trial balance and location of errors therein; the adjusting and closing entries; the preparation of simple financial statements related topics such as the development of special journals and subsidiary ledgers; and a discussion of the business procedure and forms as background for the accounting instruction. Throughout this course the practice set will constitute an important part of the students' homework. It will be supplemented by problems and questions. Prerequisite to all accounting courses. Required of business students. First Year.

3 hours a week; second semester; credit 3 units.

Accounting 2. *ACCOUNTING PRINCIPLES I*.—This course is a continuation of Accounting 1 in which accounting principles are applied to single proprietorship and partnership businesses. The subject matter of

the course includes: single-entry system of bookkeeping; the change of single-entry to double-entry; development of accounting records, such as the use of columnar journals; entries for notes receivables, notes payable, and drafts; business procedures and forms; expansion and classification of accounts; basic interrelations between accounting and business management; and problems in connection with the formation, operation, and dissolution of partnership. Thruout this course the practice set will constitute an important part of students' home work. It will be supplemented by problems and questions. Prerequisite to further accounting courses. Required of all business students. Second Year.

3 hours a week; first semester; credit 3 units.

Accounting 3. *ACCOUNTING PRINCIPLES II*.—A continuation of Accounting 2 in which accounting principles are applied to the manufacturing type of business and to the corporate form of organization. The subject matter of the course includes: accounts peculiar to a manufacturing business such as raw materials, direct labor, manufacturing expenses, work-in-process, and finished products; accounts peculiar to a corporation such as capital stock, par and no par-value, subscriptions, unissued, unsubscribed stock, treasury stock, surplus, etc.; development of accounting records such as operation of voucher register; factory ledger; check register; columnar journal; etc. Thruout this course the practice set will constitute an important part of the students' homework. This course will be supplemented by problems and questions. Required of business students. Second Year.

3 hours a week; second semester; credit 3 units.

Business English 35. *BUSINESS ENGLISH* (Old No. Business 5).—This course is designed to drill the student in the use of correct and forceful English for business purposes and to train him in writing effective business letters. Considerable emphasis will be given to the study of the technique and procedure of the subject and the methods of influencing the reader and directing him to take the desired action. The subject is approached from the executive's point of view. Considerable practice is given in writing all forms of business letters, and reports. Required of business students. Second Year.

3 hours a week; first semester; credit 3 units.

EDUCATION AND PSYCHOLOGY

Mr. JUAN A. CABANOS, Miss SALUD M. RAFOLS,
and Miss ADELA DEL ROSARIO

Education A: *INTRODUCTION TO EDUCATION*.—This course aims to introduce the student to the study of education. It is a survey course and aims to do for education what general science does for later specialized course in science. It deals with teaching as a profession, the child as an object of study, the curriculum, the necessity for good methods, public school organization, education of the past and present, and many major problems that are met in the field of education. The purpose of the course is to prepare the student for specialized study to come later. Required of second-year students.

3 hours a week; first semester; credit 3 units.

Education 1: *HISTORY OF EDUCATION*.—The growth and development of the educational doctrine into its modern form. Required, second semester, second year. Lecture, reading, and class discussion.

3 hours a week; second semester, credit 3 units.

Education 2: *PRINCIPLES OF TEACHING*.—A study of fundamental ideas and their application to the more common subjects of the course of study. Required, second year. Lectures, reading class discussion and reports.

Prerequisite: Psychology 1.

3 hours a week; second semester, credit 3 units.

Education 20: *FUNDAMENTALS IN ENGLISH FOR TEACHERS*.—This course aims: (a) to improve the spoken English by training the students in pronunciation and enunciation, (b) to teach the use of reference books, (c) to give a review of grammar and the mechanics of writing, (d) to train the taste and enlarge the scope of reading for pleasure.

3 hours a week; throughout the year, credit 6 units.

Psychology 1: *ELEMENTARY PSYCHOLOGY*.—Lectures, experiments, recitations, and writing exercises calculated to impress upon the beginner the main outline of the science of psychology. Required of second-year Education students.

3 hours a week; first semester; credit 3 units.

Psychology 3: *GENETIC PSYCHOLOGY*.—The evolution of mind in the race as indicated by the behavior of organisms, from the simplest to the highest and most complex; as it develops in the individual from infancy to adulthood. Readings, lectures, reports, observation, original papers.

Prerequisite: Psychology 1. Required of all students in the second-year Education.

3 hours a week; second semester, credit 3 units.

ENGLISH

Assistant Professor **HARRIET L. RICHARDS**, Mr. **JUAN A. CABANOS**, and Miss **ADELA DEL ROSARIO**

English 1: *COMPOSITION*.—A course intended to perfect students in the mechanics of writing. The work consists in the study of principles and correct forms, in the writing and revising of themes, and in collateral reading.

Prescribed for all regular first-year students and prerequisite to all other courses in English.

3 hours a week; throughout the year, credit 6 units.

English 8; *ESSAY WRITING*.—A course in the rhetoric of argumentation and exposition, devoted to the study of principles and to the writing of essays. Outside reading required. This course should be followed by English 9.

3 hours a week; first semester, credit 3 units.

English 9: ARGUMENTATION.—A course in the rhetoric of argumentation, devoted to the study of principles, the making of briefs and the writing of arguments. Outside reading required. This course should be preceded by English 8.

3 hours a week; second semester, credit 3 units.

English 11: SURVEY OF ENGLISH LITERATURE.—Readings in the principal types of literatures as practiced by leading authors in the several periods of English literary development. This course covers epic poetry, narrative poetry, and lyric poetry down to Shelley.

Prerequisite: English 1.

3 hours a week; first semester; credit 3 units.

English 12: SURVEY OF ENGLISH LITERATURE.—Readings in the principal types of literature as prescribed by leading authors in the several periods of English literary development. This course covers lyric poetry from Shelly to the 20th century and the prose types of literature.

Prerequisite: English 1.

3 hours a week; second semester, credit 3 units.

FRENCH AND GERMAN

Assistant Professor PAUL REIM

French 1: ELEMENTARY FRENCH.—Elementary grammar and composition; translation and reading of easy French prose.

3 hours a week; throughout the year, credit 6 units.

French 2: INTERMEDIATE FRENCH.—Advanced grammar and composition; translation, reading and conversation.

3 hours a week; throughout the year, credit 6 units.

German 1: ELEMENTARY GERMAN.—Elementary grammar and composition; translation and reading of easy German prose.

3 hours a week; throughout the year, credit 6 units.

GERMAN 2: INTERMEDIATE GERMAN.—Advanced grammar and composition; translation, reading, and conversation.

3 hours a week; throughout the year, credit 6 units.

PHYSIOGRAPHY

Assistant Professor SOFRONIO BALCE

Physiography 1.—The surface features of the earth, treated with special reference to their origin and significance; agencies affecting changes in geographic features, physiographic changes in progress as applied to the Philippines. The course includes a brief consideration of the elements of meteorology and oceanography. Occasional field trips on Saturdays. Lectures, recitations, references, and reports. Open to all students particularly to those who are taking the business and teachers' courses.

3 hours a week; first semester, credit 3 units.

Physiography 2.—Continuation of Physiography 1.

3 hours a week; second semester, credit 3 units.

HISTORY

Assistant Professor JULIO E. PONGAN

History 2: *MODERN AND CONTEMPORARY EUROPE, 1815 TO THE PRESENT*.—This course will treat of the Congress of Vienna, the industrial revolution, the development of Italian and German unities, the intellectual achievements of the nineteenth century, modern social problems, imperialism in Africa and the Orient, and the World War.

3 hours a week; first semester, credit 3 units.

History 5: *PHILIPPINE HISTORY*.—From the British occupation to the American occupation. Representation in the Spanish Cortes, commercial growth, the reform movements, propaganda, the beginning of the Revolution.

3 hours a week; second semester, credit 3 units.

History 6: *ORIENTAL HISTORY*.—Brief survey of the modern history of India, China, Japan, Korea, etc., and their European associations.

3 hours a week; second semester, credit 3 units.

History 25: *UNITED STATES HISTORY, 1492-1929*.—A general survey of the history of the United States from the discovery to the present with particular emphasis on social, economic and political conditions.

3 hours a week; first semester, credit 3 units.

History 107: *ANCIENT CIVILIZATION*.—A brief survey of the contribution of the ancient world to European civilization, the development of the political, social, and economic life of the Greek people, and the growth of the Roman system of governments.

3 hours a week; second semester, credit 3 units.

History 108: *MEDIEVAL CIVILIZATION*.—A brief survey of the contribution of the Middle Ages to European civilization, the Feudal system, the Renaissance, and the Reformation.

3 hours a week; second semester, credit 3 units.

LIBRARY SCIENCE

Mr. NICANOR ZARATAN

Library Science 12; *USE OF BOOKS AND LIBRARIES*.—Introductory study of reference books and library methods as applied to individual study and research; the library card catalog; the more generally used reference books; Government publications, indexes to periodical literature. Training in the use of bibliographic aids and in compiling subject bibliography.

The aims of these courses are to familiarize the students with the resources of the library and with the standard works of reference; to help them to recognize books as essential sources of information and effective means of culture; and to train them in the intelligent and efficient use of books and libraries.

This course is intended for students who are neither majoring nor minor-
ing in library science.

3 hours a week (Class); either semester, credit 3 units.

Library Science 108: *SCHOOL LIBRARIES*.—I. Classification, cata-
loging, subject headings, and library economy. Lectures, discussions, and
practical work, simplified to meet the needs of elementary school and small
public libraries. Instruction is given: (a) in classification with the
abridged edition of Dewey's Decimal Classification as the basis, and in the
assigning of book numbers; (b) in dictionary cataloging and in making
a sample catalogue; and (c) in assigning subject headings, with Sear's
List of Subject Heading for Small Libraries (2d. ed.) as the basis.
Toward the end of the course the three phases of work are correlated
so as to give the students practice in the complete and unified process of
cataloguing a book, including the assignment of call numbers. Under li-
brary economy are included accessioning, shelf-listing, labeling, gifts
withdrawals, charging systems, inventory, library hand writing, checking
and care of serials, preparation of book for the shelves, and other me-
chanical processes.

This course in elementary technical methods is open to students who
are neither taking the regular library science course in the College of
Liberal Arts, nor pursuing the course in education with major in library
science in the College of Education.

3 hours a week (Class); either semester, credit 3 units.

Library Science 109; *SCHOOL LIBRARIES II*.—Organization and ad-
ministration of, and book selection for, school libraries.

Part 1 includes the place of the school library in modern education and
its relation to curriculum and extra-curricular activities; duties and res-
ponsibilities of the school librarian and his relation to administrative of-
ficers and faculty; school library rooms; standards of equipment and sup-
plies; records and statistics; care of various types of library material;
bookbinding and repair; publicity.

Part 2 covers a study of the principles and methods of selecting books
for different types of school libraries, with emphasis on children's literature
and on the use of bibliographic aids; selection of periodicals; book buying.

Part 3 is devoted to practice work covering not less than twenty-five
hours in the normal and high-school libraries during the semester, and ob-
servation of the work of libraries of different types in the city under the
guidance of the instructor.

This course is open only to students who are taking neither regular
library science course in the College of Liberal Arts, nor the education
course with major in library science in the College of Education.

3 hours a week (Class); first semester, credit 3 units.

Library Science 122; *CLASSIFICATION, SUBJECT HEADINGS, AND
LIBRARY ECONOMY*.

Part 1: A study of the general principles of classification with an in-
tensive study of the Dewey Decimal Classification. Some attention is
given to the Library of Congress system of classification. Assignment of
the book number and other parts of the call number.

Part 2: A study of the principles of subject entry in a dictionary catalog and practice in assigning subject headings.

Part 3: Under the heading library economy are grouped various library records and routine, such as mechanical processes, accessioning, shelflisting, charging systems, care of gifts, serials, pamphlets and supplies; care of shelves, inventory, withdrawals; business correspondence.

3 hours a week (Class); second semester, credit 3 units.

MATHEMATICS AND PHYSICS

Professor CANUTO O. BORROMEO; Mr. CLODOVEO SORIANO and Miss SALUD M. RAFOLS

Mathematics A: *REVIEW OF ELEMENTARY ALGEBRA AND GEOMETRY*.—Required of all students who have failed in the Entrance Test.

3 hours a week; either semester no credit.

Mathematics O: *SOLID GEOMETRY*.—Solid and spherical geometry. An elective course open to any student in the College.

3 hours a week; first semester, credit 3 units.

Mathematics 1: *COLLEGE ALGEBRA*.—Quadratics with graphs, progressions, inequalities; complex numbers; permutations and combinations; binomial theorem; probabilities; determinants; theory of equations.

3 hours a week; first semester, credit 3 units.

Mathematics 2: *THEORY OF INVESTMENT*.—Logarithms; simple and compound interest; annuities; bonds. A required course for Commerce students.

3 hours a week; second semester, credit 3 units.

Mathematics 4: *TRIGONOMETRY*.—Logarithms; trigonometric functions with graph, general formulas; solution of triangles with applications; elements of spherical trigonometry with applications to astronomy.

3 hours a week; second semester, credit 3 units.

Mathematics 7: Review of the four fundamental operations; factoring; linear equations theory of exponents and surds; quadratic equations; graphs of linear and quadratic functions; progression; ratio and proportion; variation; binomial theorem (for pre-medical students only).

3 hours a week; first semester, credit 3 units.

Mathematics 8: Permutation and combination; probability; trigonometric functions; logarithms; solution of right triangles with applications; slope of a curve and derivatives; maxima and minima with application to curve tracing (for pre-medical students only).

3 hours a week; second semester, credit 3 units.

Mathematics 10: *ANALYTIC GEOMETRY*.—Plane analytics; conic sections; graphs; introduction to solid analytics. Required of students majoring in Mathematics.

5 hours a week; either semester, credit 5 units.

Mathematics 21; *CALCULUS*.—A brief course in differential and integral calculus designed for education and science students.

5 hours a week; second semester, credit 5 units.

Physics A: *HIGH-SCHOOL PHYSICS*.—Required of all students who have failed in the Entrance Test, Type A, and who desire to take higher physics.

7 hours a week (4 Lab, 3 Lec); throughout the year, credit entrance only.

Physics 31: *GENERAL PHYSICS*.—Certain topics which should be of special value to pre-medical students are emphasized. The work is carried on by means of lectures, quizzes, laboratory work, and problems in Physics.

Prerequisites: Physics A or its equivalent, Mathematics 4.

6 hours a week (3 Lab, 3 Lec.); first semester, credit 4 units.

Physics 32: *GENERAL PHYSICS*.—This course is a continuation of Physics 31.

6 hours a week (3 Lab, 3 Lec); second semester, credit 4 units

POLITICAL SCIENCE

Professor JOSE S. REYES

Political Science 2:—*CONSTITUTIONAL HISTORY*.—The growth of constitutionalism in Great Britain, Continental Europe, United States, and the Philippines. Prescribed in the first year of the Pre-Law course.

3 hours a week; first semester, credit 3 units.

Political Science 3: *AMERICAN GOVERNMENT*.—A study of the fundamental principles of the government of the United States, the Federal Constitution, and the Party System. A brief survey of the state and local government. Prescribed in the second-year Pre-Law course.

3 hours a week; first semester, credit 3 units

Political Science 4: *PHILIPPINE GOVERNMENT UNDER THE JONES LAW*.—A study of the Philippine Government under the Jones Law.

3 hours a week; first semester, credit 3 units.

Political Science 5: *ORIENTAL GOVERNMENT*.—A study of the government and political relations of the Orient, particularly of Japan, China and the East Indies.

3 hours a week; second semester, credit 3 units.

Political Science 6: *EUROPEAN GOVERNMENTS*.—

3 hours a week; second semester, credit 3 units

PHILOSOPHY

Mr. JUAN A. CABANOS

Philosophy 1: *LOGIC: DEDUCTIVE AND INDUCTIVE*.—A course leading to scientific methods and not to epistemology. Special stress on fallacies and the syllogism. Prescribed in the first-year Pre-Law course

3 hours a week; either semester, credit 3 units

SOCIAL SCIENCE (AUTHORIZED SUBSTITUTES)

The following courses will be accepted without further consideration as substitutes for Social Science 1 and Social Science 2:

Mathematics 1, and Mathematics 4, or 6 points of work under Group V. Passed by the University Council, on October 6, 1928).

SOCIOLOGY

Assistant Professor JULIO E. PONGAN

Sociology 11: *ELEMENTARY SOCIOLOGY*.—An orientation course in the field of Sociology. The nature and scope of Sociology; social forces; social processes and social problems with application to local social conditions.

3 hours a week; first or second semester, credit 3 units.

SPANISH

Assistant Professor PACIENTE S. VILLA

Spanish 10: *ELEMENTARY SPANISH*.

Spanish 11: *ELEMENTARY SPANISH*.—A study of the elements of the Spanish language, with reading and exercises in conversation and composition.

The two courses of one semester each constitute a year course, with credit of 6 units divisible into two semestral courses of 3 units each.

Prerequisite for Spanish 11, Spanish 10.

3 hours a week; credit 3 units, each semester.

Spanish 12: *INTERMEDIATE SPANISH*.

Spanish 13: *INTERMEDIATE SPANISH*.—Spanish grammar; reading, conversation and composition.

Prerequisites: Spanish 10 and 11, or its equivalent. For Spanish 13, and Spanish 12.

3 hours a week; credit 3 units each semester.

ZOOLOGY

Mrs. ROBERTA SANDALO-FILOTEO and Mr. FRANCISCO NEMENZO

Zoölogy 1: *INTRODUCTION TO PRINCIPLES OF ZOOLOGY*.—This course is designed to be introductory to medicine as well as to give a general introduction to Zoölogy. The first half is devoted to the study of the gross anatomy, histology, physiology, habits and embryology of the frog; the second half to the study of those lower organisms which are of general interest to students in Zoölogy.

9 hours a week (6 Lab, 3 class); either semester, credit 5 units.

Zoölogy 16: *GENETICS, EUGENICS, AND EVOLUTION*.—A cultural course dealing with the history and principles of Genetics and Evolution. Open to all students without previous training in Zoölogy, Lectures, readings, and class recitations.

3 hours a week; one semester, credit 3 units.

Zoölogy 21: COMPARATIVE ANATOMY AND PHYLOGENY OF VERTEBRATES.—Organs and systems and their phylogeny will be traced through various groups of vertebrates from a morphological point of view. Required course for students intending to study medicine.

Prerequisite: Zoölogy 1.

9 hours a week (6 Lab, 3 class); first or second semester, credit 5 units.

Zoölogy 24: SYSTEMATIC ZOOLOGY.—A general systematic survey of the animal kingdom and a study of morphology, physiology, and methods of collecting and preserving animals. Primarily for Education students.

Prerequisite: Zoölogy 1 or its equivalent.

9 hours a week (6 Lab, 3 class); second semester, credit 5 units.

PHYSICAL EDUCATION

All students are required to devote one hour to physical training, unless exempted therefrom for valid reasons by proper authorities.

MILITARY SCIENCE

Military Science and Tactics is a required subject in the curricula of all Colleges of the University. It is a prerequisite for graduation and must be completed during the first two years residence in the University.

EXEMPTION

Exemption from Physical Education or Military Science must be secured during the first two weeks after registration to be credited for that particular semester. Students not exempted will be required to report as stated above and failure to pass the course will debar them from graduation.

THE TWO-YEAR CURRICULUM IN PREPARATORY LAW

(Leads to the title of Associate in Arts. Required for admission to the College of Law)

FIRST YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
English 1 -----	3	3	English 1 -----	3	3
Spanish 10 -----	3	3	Spanish 11 -----	3	3
Social Science 1 ----	3	3 *	Social Science 2 ----	3	3 *
Political Science 2 --	3	3	Philosophy 1 -----	3	3
History 5 -----	3	3	Political Science 4 --	3	3
Military Science ----	(3)	(1.5)	Military Science ----	(3)	(1.5)
Physical Education -	(1)	(1)	Physical Education -	(1)	(1)
Totals -----	15	15	Totals -----	15	15

SECOND YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
English 8 -----	3	3	English 9 -----	3	3
Spanish 12 -----	3	3	Spanish 13 -----	3	3
Science: -----		3 or 5	Science: -----		3 or 5
Political Science 3 --	3	3	Political Science 5 --	3	3
History 2 -----	3	3	Political Science 6 --	3	3
J. H. R. -----	1	1	J. H. R. -----	1	1
Military Science ----	(3)	(1.5)	Military Science ----	(3)	(1.5)
Physical Education -	(1)	(1)	Physical Education -	(1)	(1)
Totals -----	13+	16	Totals -----	16	16

THE TWO-YEAR CURRICULUM IN PREPARATORY MEDICINE

(Leads to the title of Associate in Arts. Required for admission to the College of Medicine)

FIRST YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
English 1 -----	3	3	English 1 -----	3	3
French 1 or German 1	3	3	French 1 or German 1	3	3
Zoology 1 -----	9	5	Botany 1 -----	9	5
Chemistry 23 -----	9	5	Chemistry 23 -----	9	5
Mathematics 7 -----	3	3	Mathematics 8 -----	3	3
Military Science ----	(3)	(1.5)	Military Science ----	(3)	(1.5)
Physical Education -	(1)	(1)	Physical Education -	(1)	(1)
Totals -----	27	19	Totals -----	27	19

* The following courses are allowed as substitutes for Social Science 1 and 2 in the Junior College of the University of the Philippines at Cebu; namely Mathematics 1, Mathematics 4, or 6 points of work under Group V. (University Council Minutes, Oct. 6 1928.)

SECOND YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
French 2 or German 2	3	3	French 2 or German 2	(3)	(1.5)
Chemistry 26	9	5	Chemistry 26	3	3
Chemistry 27	9	5	Zoology 21	9	5
Physics 31	6	4	Physics 32	9	5
Social Science 1	3	3 *	Social Science 2	6	4
Military Science	(3)	(1.5)	Military Science	3	3 *
Physical Education	(1)	(1)	Physical Education	(1)	(1)
Totals	30	20	Totals	30	20

THE FIRST TWO-YEAR CURRICULUM IN BUSINESS
ADMINISTRATION*(Leads to the title of Associate in Arts)*

FIRST YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Spanish 10	3	3	Spanish 11	3	3
Science:	3	3	Science:	3	3
Mathematics 1	3	3	Social Science 2	3	3 *
Social Science 1	3	3 *	Accounting 1	3	3
Military Science	(3)	(1.5)	Military Science	(3)	(1.5)
Physical Education	(1)	(1)	Physical Education	(1)	(1)
Totals	15	15	Totals	15	15

SECOND YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
Spanish 12	3	3	Spanish 13	3	3
Economics 11 (Econ. 1)	3	3	Mathematics 2	3	3
Accounting 2	3	3	Accounting 3	3	3
Economics 15 (Econ. 3) or 110 (Econ. 4)	3	3	Economics 16 (Econ. 2)	3	3
Business Eng. 35	3	3	Economics 121 (Econ. 7)	3	3
Military Science	(3)	(1.5)	Military Science	(3)	(1.5)
Physical Education	(1)	(1)	Physical Education	(1)	(1)
Totals	18	15	Totals	18	15

THE FIRST TWO-YEAR CURRICULUM IN EDUCATION

FIRST YEAR

First Semester			Second Semester		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Laboratory Science	—	5	Laboratory Science	—	5
Group V elective	3	3	Group V elective	3	3
Social Science 1	3	3 *	Social Science 2	3	3 *
Military Science	(3)	(1.5)	Military Science	(3)	(1.5)
Physical Education	(1)	(1)	Physical Education	(1)	(1)
Totals	12+	17	Totals	12+	17

* See substitutions authorized.

SECOND YEAR

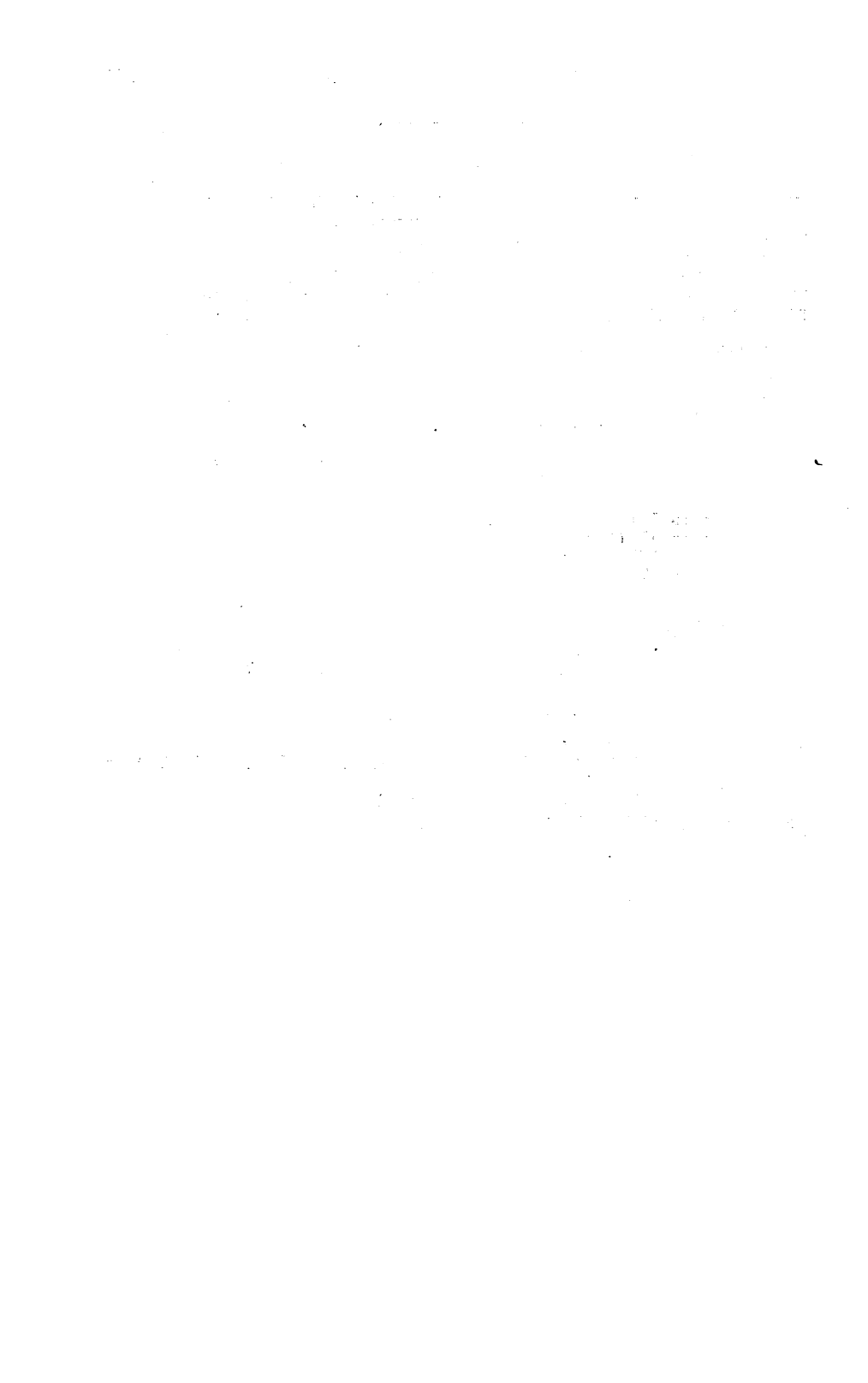
First Semester			Second Semester		
	Hours	Units		Hours	Units
Elective in English -	3	3	Elective in English -	3	3
Language 2 -----	3	3	Language 2 -----	3	3
Educ. A or H Educ. 1	3	3	Education 1 -----	3	3
Psychology 1 -----	3	3	Psychology 3 -----	3	3
Major Subject -----	3	3	Major Subject -----	3	3
Military Science ----	(3)	(1.5)	Military Science ----	(3)	(1.5)
Physical Education -	(1)	(1)	Physical Education -	(1)	(1)
Totals -----	15	15	Totals -----	15	15

THE TWO-YEAR GENERAL A. A. CURRICULUM

*(Leads to the title of Associate in Arts)**Minimum Requirements*

	Units
Group I (English) -----	12
Group II (Languages) -----	12
Group III (Laboratory Science) (1) -----	15
Group IV (Social Science) (2) -----	21 — (3)
Free Electives -----	3
Physical Education -----	4
Military Science -----	6
Total -----	73

- (1) Five units must be in laboratory science.
- (2) Must include the following:
 - 6 units of any two of: Lib. Sc. 12, Hist. 5, Pol. Sc. 4, Anth. 1 or
 - 6 units of Social Science 1 & 2.*
 - 103, Economics 2 or Sociology 11.
- (3) 3 units of philosophy 1, compulsory.



The College of Education

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Dean of the College. Dr. FRANCISCO BENITEZ.

Secretary: Mr. MELQUIADES M. CASTRO.

CHAIRMEN OF STANDING COMMITTEES

Athletics: Professor JOSE TEODORO.

Catalogue: Professor LOIS STEWART OSBORN.

Curriculum: Professor LOIS STEWART OSBORN.

Graduate Study: Dean FRANCISCO BENITEZ.

Schedule: Mr. MELQUIADES M. CASTRO.

Scholarship: Professor JOSE TEODORO.

Student Activities: Professor MARIA V. VENTURA.

BUSINESS DIRECTORY

OFFICE OF THE DEAN: The Office of the Dean is located in Room No. 114 on the first floor of University Hall.

TELEPHONE CONNECTIONS: The Dean's office may be reached from the outside by Tel. 56921 or by Phone No. 18 on the local exchange.

CORRESPONDENCE: Address all correspondence to the Dean, College of Education, University of the Philippines.

STANDING COMMITTEES OF THE COLLEGE OF EDUCATION

Athletics

Professor Jose Teodoro

Mr. Rodolfo W. Flores

Catalogue

Professor Lois Stewart Osborn

Professor Soledad Aguirre

Curriculum

Professor Lois Stewart Osborn

Professor Soledad Aguirre

Professor Ramona S. Tirona

Professor Juan Canave

Graduate Study

Dean Francisco Benitez

Dr. Isidoro Panlasigui

Dr. Sinforoso Padilla

Schedule

Mr. Melquiades M. Castro

Professor Juan C. Canave

Scholarship

Professor Jose Teodoro

Mrs. Paz Gloria Canave

Mr. Melquiades M. Castro

Student Activities

Professor Maria V. Ventura

Mr. Aniceto Fabia

Mr. Aurelio C. Ramos

Mr. Rodolfo W. Flores

FACULTY OF INSTRUCTION

FRANCISCO BENITEZ, B.S., M.A., LL.D.,
Dean and Professor of Education.

LOIS STEWART OSBORN, B.S., M.A.,
Professor of Education.

JOSE TEODORO, LL.B., B.S.E.,
Professor of Education.

RAMONA S. TIRONA, B.A., B.S.E., M.A.,
Associate Professor.

ISIDORO PANLASIGUI, B.A., M.A., Ph.D.,
Assistant Professor and Head, Department of Psychology.

MARIA VALDEZ-VENTURA, B.A., B.S.E., M.A., LL.B.,
Assistant Professor of Education.

SOLEDAD AGUIRRE, B.A., B.S.E.,
Assistant Professor of Education.

MARY THOMAS, B.A.,
Assistant Professor of Education.

JULIA WENDT, B.A.,
Assistant Professor of Education.

CONSUELO BARRERA, B.A., B.S.E.,
Assistant Professor of Education.

GABRIEL R. MAÑALAC, B.A., Pd.M.
Professorial Lecturer.

FLORENTINO CAYCO, B.A., M.A.,
Professorial Lecturer.

WALTER G. M. BUCKISCH, M.A.,
Professorial Lecturer.

MELQUIADES M. CASTRO, B.S.E.,
Instructor and Secretary of the College.

PAZ GLORIA CANAVE, B.S.E., M.A.,
Instructor.

URSULA B. UICHANCO, B.A., Ph.B., B.S.E., M.A.,
Assistant Professor of Education.

AURELIO C. RAMOS, A.B., B.S.E., M.A., LL.B., LL.M.,
Instructor.

JUAN C. CANAVE, B.S., B.S.E., M.A.,
Assistant Professor and Acting Principal, University High School.

WILFRIDO MACEDA, B.S.E.,
Instructor.

ANICETO B. FABIA, Ph.B., B.S.E.,
Instructor.

RODOLFO W. FLORES, B.S.E., M.A.,

Instructor.

ANTONIO ISIDRO, B.S.E., M.A.,*

Instructor.

PABLO SIMON TECSON, B.S.M.E., M.S.,

Instructor.

AMPARO FERNANDEZ-GONZALEZ, B.S., M.A.,

Instructor in charge, Department of Home Economics.

MARCELA IGNACIO, B.A.,

Instructor.

JOSE VERACRUZ AÑONUEVO, B.A.,

Instructor.

DEOGRACIAS BORLOÑGAN, B.S.E., M.A.,

Instructor.

JUAN L. DE LA CRUZ, B.A., B.S.E.,

Instructor.

VITO N. DEL FIERRO, Ph.B., B.A., B.S.E.,

Instructor.

SOCORRO POLICARPIO, B.S.E., M.A.,

Instructor.

CIRILO MAGTIRA, B.S.E.,

Instructor.

JOSEPHINE MILES, B.A.,¹

Instructor.

PRESENTACION PEREZ, B.S.E.,

Instructor.

SINFOROSO PADILLA, A.B., M.A., Ph.D.,

Instructor.

DELFINA DE SAN AGUSTIN, B.S.E.,

Instructor.

ASUNCION GIRON-PANLASIGUI, B.S.E.,

Instructor.

GREGORIA MONTEMAYOR-ALBERT¹, B.S.E.,

Assistant Instructor.

PATERNO VILLANUEVA, M.A.,

Instructor.

JOSEFINA ESTRADA B.S.E.,

Instructor.

CATALINA BARZA-MELCHOR, B.S.H.E.,

Assistant Instructor.

¹ On leave

* U. P. Fellow

THE COLLEGE OF EDUCATION

SCOPE AND AIMS

The purpose of the College of Education is to bring together and correlate all of the forces of the University which contribute in a professional way to the preparation of educational leaders in high schools, normal schools, supervisorships, and superintendencies.

The curriculum of the college is based upon the assumption that teachers should have first of all, and fundamental to all other preparation, a broad and liberal education; second, that they should be masters of some special subject or group of subjects which they expect to teach; and, third, that this training should be supplemented by professional education which shall give a new meaning to the subjects of instruction, and a knowledge of the pupils to be taught and the problems to be met.

ADMISSION REQUIREMENTS

Candidates for admission to the College of Education must have completed the preparatory course of one year.

The number of students is limited to 350 selected on the basis of an entrance examination consisting of the following collegiate subjects:

1. English
2. Laboratory Science (Either Physics, Chemistry, Botany or Zoology)
3. Social Science (Either History, Economics, Political Science or Sociology)

INFORMATION FOR STUDENTS AND ADVISERS

The following summarized rulings should be read by all students and all advisers.

1. A subject must not be dropped without permission. Students so dropping a subject will be marked "5" in the subject.

2. Substitution may be made under the following conditions:

a. Must be recommended by adviser, if any, and by the heads of department and deans concerned;

b. Must be approved by the Curriculum Committee of the University Council.

c. Must be within the same department, if possible; if not, the two subjects concerned must be allied to each other;

d. The subject to be taken in lieu of the required subject must carry at least the same number of units as the latter;

e. Must be one of the following grounds only:

(1) When a student is pursuing a curriculum that has been superseded by a new one and the substitution tends to bring the old curriculum in line with the new one;

(2) Conflict of hours between a required subject and another required subject;

(3) When the required subject is not given.

f. Exceptional cases not covered under any of the above rules may be allowed upon the recommendation of the faculty of the college or school concerned and upon the approval of the Curriculum Committee by two third votes of the members present.

3. Students must remove a condition within a year. If this is not done, the condition becomes a failure.

4. Advanced credits must be applied for not later than July 15.

SCHOLARSHIP RULES

The following Scholarship Rules of the College of Education, approved by the Faculty at its meeting of November 3, 1927, will take full force and effect beginning summer 1928.

PROBATION

A student who at the end of the semester receives in his final grades one 5 and one 4 or two 4's and one 5 or two 5's or three 4's shall be placed on probation the following semester. Such student may take the regular amount of work.

DISMISSAL

A student who has been placed once on probation and who for the second time makes himself liable to a second probation, shall be dismissed from the College of Education.

The same penalty shall be imposed upon a student who at the end of the semester incurs a delinquency in excess of that provided for probation.

IRREGULAR STUDENTS

These rules shall be applicable to any student carrying less than four subjects a semester. But in this case, delinquency shall be determined proportionately to the amount of work being carried according to the following rules:

1. An irregular student who is taking three subjects and who at the end of the semester obtains a grade of two 4's or one 5 in his final grades, shall be placed on probation.

An irregular student who has been once placed on probation and who for the second time makes himself liable to a second probation, shall be dismissed from the College of Education. The same penalty shall also be imposed upon an irregular student who at the end of the semester incurs a deficiency in excess of that provided for probation.

2. An irregular student who is taking two subjects and who at the end of the semester obtains a grade of one 4 or one 5 shall be placed on probation.

An irregular student who has been once placed on probation and who for the second time makes himself liable to a second probation, shall be dismissed from the College of Education. The same penalty shall also be imposed upon an irregular student who at the end of the semester incurs a delinquency in excess of that provided for probation.

3. An irregular student who is taking one subject and who, at the end of the semester obtains a 4 shall be placed on probation.

An irregular student who has been once placed on probation and who for the second time makes himself liable to a second probation, shall be dismissed from the College of Education. The same penalty shall be imposed upon a student who at the end of the semester obtains the grade of 5.

These rules governing irregular students shall apply to students attending the summer session.

SUSPENSION OF THE EFFECT OF THESE RULES

The effect of any of these rules may be suspended in cases where, on account of illness or other untoward circumstance, a student has been unable to carry on his studies satisfactorily.

DECISION BY THE SCHOLARSHIP COMMITTEE ON EXCEPTIONAL CASES

The Scholarship Committee has full power to decide all such exceptional cases when presented to it on appeal; provided that from said decision, a final appeal may be taken to the Dean whose decision must be given in writing.

NUMBER OF UNITS CARRIED AT ONE TIME

A regular student may be permitted to enroll in six subjects (not more than 18 units of non-laboratory, and not more than 21 units of laboratory subjects) provided he needs the sixth subject in order to graduate. In other cases this privilege will only be granted when the student so petitioning has a general average of 2 or better in all the subjects taken during the last semester. A student desiring to enroll in seven subjects must have obtained a grade of 1 in three-fourths of his subjects and a grade of 2 in the remaining subjects taken during the last semester.

HONORS

The degree of Bachelor of Science in Education "with honors" (Cum Laude) shall be granted to students in the regular course who have obtained an average grade of 1.30 without "3" in all subjects taken during three or four years' residence in the college; the degree of Bachelor of Science in Education "with high honors" (Magna Cum Laude) shall be granted to students in the regular course who have obtained an average grade of 1.20 without "3" in all subjects taken during three or four years' residence in the college; and the degree of Bachelor of Science in Education "with highest honors" (Summa Cum Laude) shall be granted to students in the regular course who have obtained an average grade of 1.10 without "3" in all subjects taken during three or four years' residence in the college. A student who has been granted advanced credit in Education 5 (Practice Teaching) who, by reason thereof, has been credited with a grade of "3" shall not be considered as disqualified from graduat-

ing with honors, because of said "3", Provided, that all his grades are 1's and 2's in all the other subjects he has taken in the college

(Approved by the faculty at its meeting of December 8, 1930).

The following resolutions were adopted by the faculty of the College of Education at its meeting of December 3, 1930:

1. That students must secure a grade of "2" in the following subject matter courses in order to be allowed to continue their respective major courses except letter (f):

- a. Biology majors: Botany 4 or its equivalent and Zoology 24.
- b. Economics majors. Economics 11 and Economics 16.
- c. English majors: Education 20.
- d. Health Education majors: Health Education 1 and Health Education 2.
- e. History majors: History 5 and History 25.
- f. Mathematics majors: A grade of "3" or better in Mathematics 1, Mathematics 4, and Mathematics 10.

This however was made only as a departmental requirement or policy.

2. That no student will be recommended for graduation who does not have such number of grades of "1" and "2" as to make his general average 2.50 or better.

This rule shall affect all students of the College of Education who may graduate at the end of the first semester in 1932-33 and thereafter.

FEES AND DEPOSITS

The full tuition in this college is ₱42.50 a semester excluding laboratory fees, which will be paid only in case the student is required to take laboratory subjects.

Students coming from other universities will have to pay an entrance fee of ₱5.00 and to make a deposit of ₱15.00.

MILITARY SCIENCE

Military Science and Tactics is a required subject in the curricula of all the colleges of the University. It is a prerequisite for graduation and must be completed during the first two years of residence in the University.

CREDITS EARNED IN OTHER INSTITUTIONS

The following resolutions approved by the University Council at its 91st meeting are hereby quoted for the information of all concerned:

"That the University of the Philippines will give no credit for any course taken in any other university, college, or school by any student registered in this Institution, unless such course is expressly authorized by the dean or director concerned, and a written permit therefor is recorded by the Registrar or by his representative, and in which permit the subjects authorized, are specified.

That the University of the Philippines will admit no student registered in any other university, college, or school without a written permit from his dean, director, or registrar, and in which permit the total number of semester hours in which the student is registered and the subjects he is authorized to take in this University, are specified.

REGISTRATION

Beginning with the school year 1926-27, students entering the University from the high schools and intending to take work in the College of Education will register the *first year* in the College of Liberal Arts. At the beginning of the second year they will register in the College of Education. Before presenting themselves for registration at the beginning of the second year, students should decide what major subject they wish to take.

H. S. T. C. GRADUATES

Students of the College of Education holding the High School Teachers Certificate (H.S.T.C.) may obtain the degree of Bachelor of Science in Education by completing the following courses:

	Units
Education 8 (or Education 12)	3
Education 9	3
Psychology 105	3
Major subject ¹	2 semestral courses or 6
English electives	6
Approved free electives	6
Physical Education, one hour a week for 1 year.	

THE FOUR-YEAR CURRICULUM IN EDUCATION

Leads to the degree of Bachelor of Science in Education (B.S.E.). Open to graduates of approved Four-Year Secondary Schools

PREPARATORY EDUCATION

(Taken in the College of Liberal Arts)

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Sc 1 .....	...	5	Lab Sc 1 .....	...	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

(Group V [Liberal Arts General Curricula] includes Anthropology, Economics, Sociology, Geography, History, Journalism, Library Science, Philosophy, Political Science, Psychology.)

¹ Geography majors may take Education 71, 6 units, and upon approval, may substitute six units of General Science major subjects.

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ I	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Subject	3	3	Maj Subject	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	16½	Totals .....	...	16½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Min Subject ^a	3	3	Min Subject ^a	3	3
Maj Subject	3	3	Maj Subject	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	15

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 8 or	3	3
Elective	3	3	Education 12	(3)	(3)
Educ 5 .....	...	3	Elective	3	3
Totals .....	...	16	Educ 5 .....	...	3
			Totals .....	...	16

^a Any student who desires to take two years of French or German in order to meet the language requirements for an advanced degree, may take his minor subject in the fourth year in place of a free elective.

MAJOR AND MINOR COURSES

Students in the College of Education may major in one of the following subjects: English, mathematics, history, general science, biology, physics, economics, library science, home economics, Spanish, physical education and health education.

Students in the College of Education may minor in any of the subjects mentioned as majors. Government (political science) is taken as a minor with history as a major, but not with any other major.

BIOLOGY MAJORS **PREPARATORY EDUCATION**

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Sc (Botany 4)	9	5	Lab Sc (Botany 4)	9	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Sub (Zool 1)	6	5	Maj Sub (Zool 24) ...	9	5
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	18½	Totals .....	...	18½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Minor Subject	3	3	Minor Subject	3	3
Educ 80	3	3	Maj Sub Elective	9	5
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	17

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	3	3
Elective	3	3	Educ 8	(3)	(3)
Educ 5 .....	...	3	Elective	3	3
Totals .....	...	15	Educ 5 .....	...	3
			Totals .....	...	15

Twenty-eight units of the major subject (including three units of the teaching of biology) are required of students majoring in biology.

Biology majors who have completed Zoology in the first year should take Botany 4 in the second year. Botany 2 or Botany 6 is equivalent to Botany 4.

¹ Recommended electives: Botany 101, credit 3 units; choose among Zool 112, Zool 21, Zool 105, Zool 106, Zool 116, credit 5 units, or Zool 107 credit 6 units, Chemistry 22.

**ECONOMICS MAJORS
PREPARATORY EDUCATION**

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science .....	...	5	Lab Science .....	...	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Sub (Econ 11) ..	3	3	Maj Sub (Econ 16) ...	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	16½	Totals .....	...	16½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Minor Subject	3	3	Minor Subject	3	3
Major Sub (Educ 30) .	3	3	Maj Sub (Econ 15 or		
Phys Educ	(1)	....	Econ 110)	3	3
Totals .....	...	15	Phys Educ	(1)	....
			Totals .....	...	15

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	3	3
Elective in economics ..	3	3	Educ 8	(3)	(3)
Educ 5 .....	...	3	Elective in economics ..	3	3
Totals .....	...	15	Educ 5 .....	...	3
			Totals .....	...	15

Eighteen units of economics (including the teaching of economics), are required of students majoring in economics.

Education 30 (Formerly Economics 30. Old number Econ 21).

History is a recommended minor with the economics major.

**ENGLISH MAJORS
PREPARATORY EDUCATION**

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science 1 .....	...	5	Lab Science 1 .....	...	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elec in English (Ed 20)	3	3	Elec in English (Ed 20)	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Sub (Engl 11)	3	3	Maj Sub (Engl 12)	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	16½	Totals .....	...	16½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 8 or 9	3	3	English 107	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Minor Subject	3	3	Minor Subject	3	3
Maj Sub (Educ 21)	3	3	Maj Sub (Educ 21)	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	15

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	3	3
Elective in English ...	3	3	Educ 8	(3)	(3)
Educ 5 .....	...	3	Elective in English ...	3	3
Totals .....	...	15	Educ 5 .....	...	3
			Totals .....	...	15

Eighteen additional units of English (including the teaching of English) are required of students majoring in English. This is equal to 36 units of English.

Required courses: English 1, English 8 or 9, English 11, 12, English 107, (formerly Eng. 207), Education 20, Education 21.

Recommended electives: Education 122, English 123, English 106, English 120, English 121, English 122, English 124.

Library Science is a recommended minor with the English major.

GENERAL SCIENCE MAJORS PREPARATORY EDUCATION

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Chemistry 22	5	5	Chemistry 22	5	5
Group V Elective	3	3	Group V Elective	3	3
Social Science 1	3	3	Social Science 2	3	3
Military Science (men) .	(3)	1½	Military Science (men) .	(3)	1½
Physical Education ...	(2)	(2)	Physical Education ...	(2)	(2)
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ..	3	3	Elective in English ¹ ..	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Education 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Botany 1 ²	5	5	Zoology 1	5	5
Military Science (men) .	(3)	1½	Military Science (men) .	(3)	1½
Physical Education	(1)	(1)	Physical Education	(1)	(1)
Totals .....	...	18½	Totals .....	...	18½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Home Eco or Health Ed	3	3	Geog Phys Geol Meteor		
Education 6	3	3	or Climatology	3	3
Minor Subject	3	3	Education 2	3	3
Education 71	3	3	Minor Subject	3	3
Physical Education	(1)	(1)	Education 71	3	3
Totals .....	...	15	Physical Education	(1)	(1)
			Totals .....	...	15

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Education 4	3	3	Minor Subject	3	3
Education 9	3	3	Educ 12 or 8	3	3
Geography 106	3	3	Elective in Phys ³	5	5
Education 5	3	3	Education 5	3	3
Totals .....	...	15	Totals .....	...	18

¹ Education 20 or English 11 and 12 and 107.

² A year's work in Botany 2, 4, or 6 will be accepted in lieu of Botany 1.

³ Students who major in General Science must have passed the entrance examination in Physics or must have finished Physics A.

Recommended courses in home economics are H. E. 1, H. E. 33, H. E. 31, or H. E. 15.

Physical Education 53 and Zoology 16 also may be accepted for credits in general science minor.

HEALTH EDUCATION MAJORS WITH BIOLOGY MINOR

PREPARATORY EDUCATION

(College of Liberal Arts)

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science (Chem 21) ...	5		Lab Science (Zool 1) ..	5	
Elective	3	3	Elective	3	3
Soc. Science 1	3	3	Social Science 2	3	3
Military Science	(3)	1½	Military Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

(College of Education)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ..	3	3	Elective in English ¹ ..	3	3
Language 2	3	3	Language 2	3	3
Education A	3	3	Education 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Health Education 1 ...	3	3	Health Education 2	6	4
Military Science	(3)	1½	Military Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	16½	Totals .....	...	17½

¹ Education 20 or English 11 and 12 is recommended.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ...	3	3	Elective in English ...	3	3
Elective	3	3	Health Education 4 ...	3	3
Education 6	3	3	Education 2	3	3
Minor Subject	5		Minor Subject	5	
Health Education 3 ...	3	3	Education 85	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	17	Totals .....	...	17

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Education 3	3	3	Psychology 105	3	3
Health Education 5 ...	3	3	Health Education 6 ...	3	3
Education 4	3	3	Educ 8 or 12	3	3
Education 9	3	3	Education 5	3	3
Education 5	3	3	Elective	3	3
Totals .....	...	15	Totals .....	...	15

At least one elective course Physical Education is recommended.

HISTORY MAJORS WITH POLITICAL SCIENCE MINOR

PREPARATORY EDUCATION

[College of Liberal Arts]

FIRST YEAR

First Semester

	Hours	Units
English 1	3	3
Lab Science .....	...	5
Language 1	3	3
Hist 2	3	3
Soc Science 1	3	3
Mil Science	(3)	1½
Phys Educ	(2)	....

Totals 18½

Note that History 2 and History 5 must be taken in the first year. This major has no free electives.

Second Semester

	Hours	Units
English 1	3	3
Language 1	3	3
Lab Science 1 .....	...	5
Hist 5	3	3
Soc Science 2	3	3
Mil Science	(3)	1½
Phys Educ	(2)	....

Totals 18½

SECOND YEAR

[College of Education]

First Semester

	Hours	Units
Elective in English ¹ ...	3	3
Language 2	3	3
Educ A or Health Educ 1	3	3
Psychology 1	3	3
Maj Sub (Hist 25) ...	3	3
Mil Science	(3)	1½
Phys Educ	(1)	....

Totals 16½

¹ Education 20 or English 11 and 12 is recommended.*Second Semester*

	Hours	Units
Elective in English ¹ ...	3	3
Language 2	3	3
Educ 1	3	3
Psychology 3	3	3
Maj Sub (Hist 6) ...	3	3
Mil Science	(3)	1½
Phys Educ	(1)	....

Totals 16½

THIRD YEAR

First Semester

	Hours	Units
Elective in English	3	3
Educ 40	3	3
Minor Sub (Pol Sci 4)	3	3
Maj Sub (Hist 107 or 104)	3	3
Phys Educ	(1)	....

Totals 15

Second Semester

	Hours	Units
Elective in English	3	3
Educ 40	3	3
Educ 2	3	3
Minor Sub (Pol Sci Elec) ²	3	3
Maj Sub (Hist 108 or 109)	3	3
Phys Educ	(1)	....

Totals 15

² It is recommended that the minor subject elective be chosen from the following courses: Pol. Sci. 3, Pol. Sci. 5, (Oriental Governments), Pol. Sci. 100 (Governments of Europe), Pol. Sci. 207 (Colonial Governments).

FOURTH YEAR

First Semester

	Hours	Units
Educ 3	3	3
Educ 4	3	3
Educ 9	3	3
Hist 101	3	3
Educ 5 .....	...	3

Totals 15

Second Semester

	Hours	Units
Psychology 105	3	3
Minor Subject	3	3
Educ 12 or	3	3
Educ 8	(3)	(3)
Hist elective	3	3
Educ 5 .....	...	3

Totals 15

Thirty units of history, including the teaching of history, and 9 units of political science are required of students majoring in history. Required courses: History 2, 5, 25, 6, 101, (107 or 104), and 108 or 109).

Education 40 (Formerly History 121).

**HOME ECONOMICS MAJORS WITH BIOLOGY MINOR
PREPARATORY EDUCATION
(College of Liberal Arts)**

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Sci 1 ^a (Chem 22) ...	5	5	Lab Sci 1 ^a (Chem 22) ...	5	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	17	Totals .....	...	17

SECOND YEAR

(College of Education)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ..	3	3	Elective in English ² ...	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Sub (H.E.26) ...	3	3	Maj Sub (H.E.31)	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	15

¹ Education 20, or English 11 and 12 is recommended.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English ¹ ..	3	3
Home Econ 15	3	3	Home Econ 18	3	3
Educ 6	3	3	Educ 2	3	3
Minor Sub	3	3	Minor Sub	3	3
Maj Sub (H.E.1.)	6	4	Maj Sub (H.E.2)	6	4
Home Econ 32	3	3	Educ 90	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	19	Totals .....	...	19

Students who have elected botany or zoology in the first year should take chemistry 22 in the third year. The credits in botany or zoology may be used to fulfill the requirements for the minor.

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	3	3
Home Econ. 4	3	3	Educ 8	(3)	(3)
Educ 5 .....	...	3	Home Econ 8	3	4
Totals .....	...	15	Educ 5 .....	...	3
			Totals .....	...	16

LIBRARY SCIENCE MAJORS
PREPARATORY EDUCATION
 [College of Liberal Arts]

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science 1 .....	...	5	Lab Science 1 .....	...	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ...	3	3	Elective in English ¹ ...	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Lib Sc 121 (Old Lib Sc 21)	3	3	Lib Sc 122 (Old Lib Sc 22)	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	16½	Totals .....	...	16½

¹ Education 20 or English 11 and 12 is recommended.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Minor Subject	3	3	Minor Subject	3	3
Lib Sc 123 (Old Lib Sc 23)	3	3	Lib Sc 157 (Old Lib Sc 107)	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	15

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	3	3
Lib Sc 165 (Old Lib Sc 115)	3	3	Educ 8	(3)	(3)
Educ 5 ^s (Lib Sc 155) .	...	3	Lib Sc 165 (Old Lib Sc 115)	3	3
Totals .....	...	17	Educ 5 ^s (Lib Sc 155) .	...	3
			Totals .....	...	17

² Library Science majors may take Lib. Sc. 155 (Library Practice) as the equivalent of Education 5.

Eighteen units of library science are required of students majoring in library science.

MATHEMATICS MAJORS
PREPARATORY EDUCATION
 (College of Liberal Arts)

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science 1 .....	...	5	Lab Science 1 .....	...	5
Math 1	3	3	Math 4	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR
 (College of Education)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ...	3	3	Elective in English ¹ ...	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Sub (Math 10) ...	5	5	Maj Sub (Math 13 or		
Mil Science	(3)	1½	Math 21)	5	5
Phys Educ	(1)	....	Mil Science	(3)	1½
Totals .....	...	18½	Phys Educ	(1)	....
			Totals .....	...	18½

¹ Education 20, or English 11 and 12 is recommended.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Math 111	3	3	Math Elective ²	5	5
Educ 6	3	3	Educ 2	3	3
Minor Subject	3	3	Minor Subject	3	3
Maj Sub (Math 51)	3	3	Maj Sub (Educ 50) ...	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	17

² Recommended electives: Math 115, and Math 125, Math 151, 131.

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	(3)	(3)
Elective	3	3	Educ 8	3	3
Educ 5 .....	...	3	Elective	3	3
Totals .....	...	15	Educ 5 .....	...	3
			Totals .....	...	15

Physics is a recommended minor with the mathematics major.

PHYSICS MAJORS
PREPARATORY EDUCATION

[College of Liberal Arts]

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science ¹	9	5	Lab Science ¹	9	5
Math 1	3	3	Math 4	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

[College of Education]

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ² ...	3	3	Elective in English ² ...	3	3
Language 2	3	3	Language 2	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Maj Sub (Phys 31) ³ ...	...	5	Maj Sub (Phys 32) ³ ...	...	5
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	18½	Totals .....	...	18½

² Education 20 or English 11 and 12 is recommended.

³ Education students may take Physics 31 and 32 lectures (3 units) and Physics 33 and 34 laboratory (2 units).

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Minor Subject	3	3	Minor Subject	3	3
Maj Sub (Phys 104) ..	...	5	Maj Sub (Phys 105) ..	...	5
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	17	Totals .....	...	17

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 60	3	3	Educ 12 or	3	3
Educ 9	3	3	Educ 8	(3)	(3)
Educ 5 .....	...	3	Elective	3	3
Totals .....	...	15	Educ 5 .....	...	3
Totals .....	...	15	Totals .....	...	15

Twenty units of physics and three units of the teaching of physics are required of students majoring in physics.

Physics 101 (formerly Physics 25) and Physics 102 (Modern Physics) are recommended as electives.

Students are urged to take an elective in physics during the third year.

**PHYSICAL EDUCATION MAJORS
PREPARATORY EDUCATION**

(College of Liberal Arts)

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science .....	...	5	Lab Science .....	...	5
Phys Educ 51	3	3	Phys Educ 53	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	...	Phys Educ	(2)	...
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

(College of Education)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ...	3	3	Elective in English ¹ ...	3	3
Language 2	3	3	Language 2	3	3
Psych 1	3	3	Psych 3	3	3
Maj Sub (Phys Educ 52)	3	3	Maj Sub (Phys Educ 55		
Phys Educ 54	3	3	or 56)	3	3
Mil Science	(3)	1½	Phys Educ 57	3	3
Totals .....	...	16½	Mil Science	(3)	1½
			Totals .....	...	16½

¹ Education 20, or English 11 and 12 is recommended.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Phys Educ 58	3	2	Phys Educ 59	3	2
Educ A	3	3	Educ 2	3	3
Educ 1	3	3	Educ 6	3	3
Phys Educ 65	3	2	Phys Educ 61	3	2
Minor Subject	3	3	Minor Subject	3	3
Maj Sub (Phys Educ 64)	3	2	Maj Sub (Phys Educ 63)	3	2
Totals .....	...	18	Totals .....	...	18

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Elective	3	3	Educ 8 or Educ 12	3	3
Educ 9	3	3	Phys Educ 62	3	2
Phys Educ 60	3	2	Phys Educ 68 .....	...	3
Educ 5 .....	...	3	Educ 5 .....	...	3
Totals .....	...	17	Totals .....	...	17

SPANISH MAJORS

FIRST YEAR

(College of Liberal Arts)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Spanish 10	3	3	Spanish 11	3	3
Lab Science .....	...	5	Lab Science .....	...	5
Elective	3	3	Elective	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	18½	Totals .....	...	18½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Spanish 12	3	3	Spanish 13	3	3
Educ A or Health Educ 1	3	3	Educ 1	3	3
Psychology 1	3	3	Psychology 3	3	3
Elective	3	3	Elective	3	3
Mil Science	(3)	1½	Mil Science	(3)	1½
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	16½	Totals .....	...	16½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English	3	3	Elective in English	3	3
Elective	3	3	Elective	3	3
Educ 6	3	3	Educ 2	3	3
Major Sub (Spanish) ...	3	3	Minor Subject	3	3
Minor Subject	3	3	Major Sub (Spanish) ...	3	3
Phys Educ	(1)	....	Phys Educ	(1)	....
Totals .....	...	15	Totals .....	...	15

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Educ 3	3	3	Psychology 105	3	3
Educ 4	3	3	Minor Subject	3	3
Educ 9	3	3	Educ 12 or	3	3
Elective (Spanish)	3	3	Educ 8	(3)	(3)
Educ 5 .....	...	3	Elective (Spanish)	3	3
Totals .....	...	15	Educ 5 .....	...	3
			Totals .....	...	15

Twenty-four units of Spanish are required of students majoring in Spanish.

Students majoring in Spanish who have elected Spanish in the first year may substitute "free elective" for "major subject" in the second year.

Students who have studied Spanish in the high school or elsewhere, and are able to take advanced Spanish, are permitted to substitute other courses in Spanish for Spanish 10, 11, 12 and 13.

Students who have elected French or German in the first and second years, will be required to carry two courses of Spanish in the fourth year.

COURSES OF INSTRUCTION

DEPARTMEN OF EDUCATION

FRANCISCO BENITEZ, Dean and Head of the Department.

LOIS STEWART OSBORN, Professor.

JOSE TEODORO, Professor.

SOLEDAD AGUIRRE, Assistant Professor.

MARIA VALDEZ-VENTURA, Assistant Professor.

MARY H. THOMAS, Assistant Professor.

JULIA WENDT, Assistant Professor.

JUAN C. CANAVE, Assistant Professor.

URSULA B. UICHANCO, Assistant Professor.

MELQUIADES M. CASTRO, Instructor.

AURELIO C. RAMOS, Instructor.

ANICETO B. FABIA, Instructor.

ANTONIO ISIDRO, Instructor.

GABRIEL R. MAÑALAC, Professorial Lecturer.

FLORENTINO CAYCO, Professorial Lecturer.

WALTER G. M. BUCKISH, Professorial Lecturer.

UNDERGRADUATE COURSES

Education A. *INTRODUCTION TO EDUCATION*.—This course aims to introduce the student to the study of education. It is a survey course and aims to do for education what general science does for later specialized courses in science. The course deals with teaching as a profession, the child as an object of study, the curriculum, the necessity for good methods, the public school organization, educators of the past and present, and many other major problems that are met in the field of education. The purpose of the course is to prepare the student for specialized study to come later. Required for second year students.

3 hours a week; first semester, credit 3 units.

Education 1; *HISTORY OF EDUCATION*.—The growth and development of educational doctrine into its modern form. Required second semester, second year.

3 hours a week, second semester, credit 3 units.

Education 2; *PRINCIPLES OF TEACHING*.—A study of the fundamental ideas and their application to the more common subjects of the course of study. Required second semester, third year.

Prerequisite: Psychology 1.

3 hours a week; either semester, credit 3 units

Education 3; *PRINCIPLES OF EDUCATION*.—An interpretation of the aims and problems of education from the standpoint of society. Required fourth year.

Prerequisite: Education 1 and Education 2.

3 hours a week; either semester, credit 3 units.

Education 4; *PRINCIPLES OF SECONDARY EDUCATION*.—Required in the fourth year.

Prerequisites: Education 1 and Education 2.

3 hours a week; either semester, credit 3 units.

Education 5; *PRACTICE TEACHING*.—Under supervision of the College of Education. Open only to students who have completed the work of the first two years of a course in the College of Education or accepted equivalents, and who are at the same time pursuing other work in this college. Required in the fourth year.

Prerequisite: Teachers' course in major subject.

Throughout the year; credit 6 units.

Education 6; *EDUCATIONAL PSYCHOLOGY*.—This course begins with a systematization on the genetic principle and extension of the data of Psychology 1. The work is accompanied and followed by the application of this enlarged body of psychology knowledge to the problems of education. Lectures, reading, extensive written exercises, and experiments.

Prerequisites: Psychology 1 and Psychology 3.

3 hours a week; either semester, credit 3 units.

Education 8; *EDUCATIONAL ADMINISTRATION*.—With special reference to the administration of the public school system of the Philippine Islands. Fourth year.

Prerequisites: Education 1 and Education 2.

3 hours a week; either semester, credit 3 units.

Education 9; *EDUCATIONAL SOCIOLOGY*.—Social foundations of the school system. A systematic presentation of the relations of public education to society, being a special application of modern social theory and knowledge to the problems of social welfare as achieved through the public school system. Lectures, readings, and discussions.

Prerequisites: Education 1 and Education 2.

3 hours a week; either semester, credit 3 units.

Education 12; *SUPERVISION OF INSTRUCTION IN THE PUBLIC SCHOOLS*.—This course will consider the guiding principles for the supervision of the different subjects in the curriculum; constructive criticism of class work of teachers; methods of measuring efficiency; supervision of discipline. Lectures, required readings and discussions. Fourth year.

Prerequisites: Education 1 and Education 2.

3 hours a week; either semester, credit 3 units.

Education 20; *FUNDAMENTALS IN ENGLISH FOR TEACHERS*.—This course aims; (a) to improve the spoken English by training the students in pronunciation and enunciation, (b) to teach the use of reference books, (c) to give a review of grammar and the mechanics of writing, (d) to train the taste and enlarge the scope of reading for pleasure.

3 hours a week; throughout the year, credit 3 units each semester.

Education 21; *THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS*.—This course consists of: (a) a study of the subject matter in English prescribed in the course of study for high schools, first and second years; (b) a study of methods of teaching English; and (c) observation and discussion of class work in secondary English.

Prerequisites: English 1 and Education 20.

3 hours a week; throughout the year; credit 6 units.

Education 30 (Formerly Economics 30); *THE TEACHING OF ECONOMICS IN SECONDARY SCHOOLS*.—Brief review of fundamental principles. Survey of the high school texts prescribed by the course of study. Connection of economics with other subjects in the curriculum. Methods of teaching and of stimulating interest in the subjects. Required of students majoring in economics.

Prerequisites: Economics 1 and Economics 2.

3 hours a week; either semester, credit 3 units.

Education 40 (Formerly History 121); *THE TEACHING OF HISTORY IN THE SECONDARY SCHOOLS*.—This course consists of a study of the subject matter in history prescribed for Philippine high schools, and a study of methods, materials, and aids in teaching history. Required of students majoring in history.

Prerequisites: History 2, History 5, History 25.

3 hours a week; throughout the year; credit 6 units.

Education 50 (Formerly Math 50); *THE TEACHING OF MATHEMATICS*.—A training course for actual or prospective teachers of secondary mathematics. Review of basic principles; solution of difficult problems, study of methods, discussion of text, and practice teaching. Open to Senior College students and to those taking the course in education.

Prerequisites: Math 1, Math 4, and Math 51.

3 hours a week; either semester, credit 3 units.

Education 60; *THE TEACHING OF PHYSICS*.—This course consists of a study of the subject matter prescribed in the course for secondary schools, the materials used in the course, and methods of teaching physics in the high schools.

Prerequisites: Physics 31 and 32.

3 hours a week; either semester; credit 3 units.

Education 71; *THE TEACHING OF GENERAL SCIENCE*.—This course consists of: (a) a study of the subject matter in general science prescribed in the course of study for high schools; (b) a study of methods

of teaching general science; and (c) observation and discussion of class work in general science. Required of all students majoring in general science.

3 hours a week; throughout the year; credit 6 units.

Education 80; *THE TEACHING OF BIOLOGY*.—This course consists of: (a) a study of the subject matter in biology prescribed in the course of study for secondary schools and (b) a study of methods of teaching biology. Required of students majoring in biology.

Prerequisites: Botany 4 and Zoölogy 24.

3 hours a week; either semester; credit 3 units.

Education 85; *THE TEACHING OF HEALTH EDUCATION*.—This course consists of a study of materials and methods in the teaching of health education.

3 hours a week; either semester; credit 3 units.

Education 90; *THE TEACHING OF HOME ECONOMICS*.—This course treats of the selection and organization of the subject matter and its adaptation to Philippine needs. It considers the aims and methods of presentation and the sources of teaching materials.

Required of students majoring in home economics and also of those taking the Bachelor of Science in Home Economics course.

Prerequisite: Education 2.

3 hours a week; either semester; credit 3 units.

Education 122; *PRACTICUM IN THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS*.—This course consists of lectures, readings, and discussions; a study of material with special reference to courses of study, determination of minimum essentials, and measurements of attainment. Subject matter in English prescribed in the course of study for high schools, third and fourth years.

Prerequisite: Education 21.

3 hours a week; throughout the year; credit 6 units.

GRADUATE COURSES

Education 200; *MODERN EDUCATIONAL THEORIES*.—A critical consideration of the writings of Froebel, Herbert, and Dewey. Elective.

3 hours a week; throughout the year; credit 6 units.

Education 201; *PRACTICUM-COMPARATIVE EDUCATION*.—A comparative study of the school systems of China, Japan, the United States, and the Philippines. Lectures, and readings. Elective.

3 hours a week; throughout the year; credit 6 units.

Education 210; *METHOD IN EDUCATIONAL RESEARCH*.—This course is intended primarily for graduate students writing theses for the M.A. degree.

3 hours a week; either semester; credit 3 units.

DEPARTMENT OF PSYCHOLOGY

Dr. ISIDORO PANLASIGUI (Head); Mrs. CANAVE, Mr. FLORES
Dr. PADILLA, Mr. VILLANUEVA

UNDERGRADUATE COURSES

Psychology 1; *ELEMENTARY PSYCHOLOGY*.—Lectures, experiments, recitations, and written exercises calculated to impress upon the beginner the principles of the science of psychology. Required of second-year students in Education.

3 hours a week; either semester; credit 3 units.

Psychology 2; *EXPERIMENTAL PSYCHOLOGY*.—A laboratory and lecture course designed to acquaint the students with the experimental methods of psychology.

Prerequisite: Psychology 1.

9 hours a week; first semester; credit 5 units.

Psychology 3 (Old number Psychology 8); *GENETIC PSYCHOLOGY*.—The evolution of mind in the race as indicated by the behavior of organisms, from the simplest to the highest and most complex, as it develops in the individual from infancy to adulthood. Readings, lectures, reports, observations, original papers.

Prerequisite: Psychology 1. Required of all students in the College of Education.

3 hours a week; second semester; credit 3 units.

Psychology 101; *EXPERIMENTAL PSYCHOLOGY*.—Work and Fatigue. A laboratory course in which a problem in work and fatigue is studied.

Prerequisite: Psychology 2.

6 hours a week; second semester; credit 3 units.

Psychology 105; *TESTS AND MEASUREMENTS*.—A course open to senior college students. Critical study of standardized tests; construction and standardization of tests; their selection and application.

Prerequisites: Psychology 1 and Psychology 3.

3 hours a week; either semester; credit 3 units.

Psychology 108.—The same as Education 6.

GRADUATE COURSES

Psychology 204; *PSYCHOLOGY OF LEARNING*.—A course which deals with principles and types of learning, factors affecting learning, transfer of training, etc.

Prerequisites: Psychology 1 and Psychology 2.

3 hours a week; second semester, credit 3 units.

Psychology 209; *SYSTEMATIC PSYCHOLOGY*.—Critical study of Structural, Functional, and Behaviouristic Psychology, their methods of approach, subject matter, etc.

Prerequisite: 6 units in Psychology.

3 hours a week; second semester, credit 3 units.

Psychology 210 (Research).—Open to advanced students in Psychology.

Hour and credits to be arranged.

THE FOUR-YEAR CURRICULUM IN HOME ECONOMICS

*Leads to the degree of Bachelor of Science in Home Economics (B.S.H.E.)**Open to Graduates of Approved Four-Year Secondary Schools*

PREPARATORY EDUCATION

(College of Liberal Arts)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Language 1	3	3	Language 1	3	3
Lab Science (Chem 22) ..	9	5	Lab Science (Chem 22) ..	9	5
Econ 1	3	3	Sociology 1	3	3
Soc Science 1	3	3	Soc Science 2	3	3
Phys Educ	(2)	....	Phys Educ	(2)	....
Totals .....	...	17	Totals .....	...	17

SECOND YEAR
(College of Education)

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective in English ¹ ..	3	3	Elective in English ¹ ..	3	3
Language 2	3	3	Language 2	3	3
Psychology 1	3	3	Psych 3 or Educ 6 ...	3	3
Home Economics 34 ..	3	3	Chem 32	9	5
Home Economics 15 ..	3	3	Home Economics 18 ..	3	3
Home Economics A (no credit) .....	...	....	Phys Educ	(1)	....
Phys Educ	(1)	....	Totals .....	...	16
Totals .....	...	15			

¹ Education 20 or English 11 and 12 is recommended.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Education 2	3	3	Bacteriology	9	5
Home Economics 1 ..	6	4	Home Economics 2 ..	6	4
Home Economics 26 ..	6	3	Home Economics 8 ..	6	4
Home Economics 27 ..	1	1	Education 90	3	3
Home Economics 31 ..	3	3	Phys Educ	(1)	....
Free Elective	3	3	Totals .....	...	16
Phys Educ	(1)	....		
Totals .....	...	17			

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Education 5 .....	...	3	Education 5 .....	...	3
Home Economics 32 ..	3	3	Home Economics 32 ..	3	3
Home Econ 4	3	3	Elec in Education ...	3	3
Free Elective	6	6	Free Elective	6	6
Totals .....	...	15	Totals .....	...	15

HOME ECONOMICS

Mrs. GONZALES, Miss PEREZ, Mrs. MONTEMAYOR-ALBERT, and
Mrs. MELCHOR

Home Economics A; *AN INTENSIVE PREPARATORY COURSE IN COOKERY REQUIRED OF HOME ECONOMICS STUDENTS WHO HAVE NOT HAD HIGH SCHOOL COOKERY.*—This course shall precede Home Economics 1.

6 hours a week, one semester; no credit.

Home Economics 1; *SELECTION AND PREPARATION OF FOOD.*—The nature and uses of foods, their chemical composition, the changes effected by cold, heat, or fermentation; principles of selection, processes of manufacture, proper combinations. First semester.

Prerequisite: General Chemistry.

Credit 4 units.

Home Economics 2; *COOKING AND ECONOMIC USES OF FOOD.*—Study of different methods of preserving food; season for different fruits and vegetables; the economics of the food question. Second semester.

Prerequisites: Home Economics 1 and Bacteriology.

Credit 4 units.

Home Economics 4; *TECHNOLOGY OF COOKERY.*—Practice cooking; making recipes. Actual planning and preparation of menus for luncheons, dinners, etc.

Prerequisites: Home Economics 1, 2.

Credit 3 units.

Home Economics 8; *DIETETICS.*—The essentials of an adequate diet; the relation of food to health; influence of age, sex, and occupation on diet; factors involved in the construction of dietaries.

Prerequisite: Home Economics 1, 2 and Physiology.

Credit 4 units.

Home Economics 15; *PRINCIPLES OF HOUSEHOLDS ADMINISTRATION.*—A general survey of the background of activities in the household and the meaning of homemaking in the present day; the organization and control of family life through the economic and social relations of the household; and the management of the family income and its expenditures.

Prerequisites: Economics 1 and Sociology 1.

First semester, credit 3 units.

Home Economics 18; *HOME DECORATION, FURNISHING, AND SANITATION.*—Artistic, economic; and sanitary aspects of home decoration and furnishing.

Second semester, credit, 3 units.

Home Economics 26; *EFFICIENCY IN SEWING*.—Use of the sewing machine and its attachments; construction of the most important garments in a home with special reference to efficiency, economy, and art designing and making of patterns.

Credit 3 units.

Home Economics 27; *TEXTILES*.—The textile industry, with special attention to that in the Philippines; fibers and materials; tests for adulteration of fabrics; and effects of laundering processes on different fabrics.

Prerequisite or parallel: General Chemistry.

Credit 1 unit.

Home Economics 31; *GENERAL HYGIENE AND SANITATION*.—Briefly covers all the subjects usually taught in home and community hygiene and sanitation, giving special attention to the adulteration and preservation of foods, disposal of household waste, control of household pests, disinfection, and methods of combating dangerous communicable diseases.

Credit 3 units.

Home Economics 32; *HYGIENE OF INFANTS AND CHILDREN*.—The care and feeding of infants in sickness and in health. Lectures, demonstrations, and discussions. Observation and practice work in the puericulture centers located in the city.

Prerequisites: Home Economics 8 and 31.

Credit 3 units.

Home Economics 33; *HOME NURSING AND EMERGENCIES*.—Lectures, recitations, and demonstration work on first-aid to the injured, and the home-care and feeding of the sick.

Prerequisites: Physiology, Home Economics 31, and Home Economics 8.

Credit 3 units.

Home Economics 34; *PHYSIOLOGY OF DIGESTION*.—This course deals with the physiology of digestion and the assimilation of foods. It is a prerequisite to the course in dietetics. Lectures and recitations. Occasional laboratory work will be required in connection with the experiments on enzymes.

3 hours a week; either semester; credit 3 units.

Home Economics 35; *PRACTICE HOUSE COURSE*.—Each girl will serve in various capacities; that is, hostess, cook, waitress, housewife, maid, and other routine work attendant on creating a real house atmosphere.

3 hours a week; second semester, credit 3 units.

PHYSICAL EDUCATION

These courses are offered by the University Department of Physical Education and are required of college of Education students majoring in physical education.

PHYSICAL EDUCATION 51 (History of Physical Education).—The course aims to familiarize the students with the literature bearing on the history of physical education including the nature, influence, and progress of physical training during its various stages of development. Lectures and assigned collateral readings.

3 hours a week; first semester, credit 3 units.

PHYSICAL EDUCATION 52 (Play and Playgrounds).—The course includes the history of the playground movements, the philosophy of play, and the organization, promotion, operation, and administration of school and municipal playgrounds. Lectures.

3 hours a week; second semester, credit 3 units.

PHYSICAL EDUCATION 53 (Physiology).—The course is elected for students who expect to become teachers of physical education. It forms the foundation work of the course in physiology of exercise and personal hygiene. Lectures and assigned collateral readings.

3 hours a week; first semester, credit 3 units.

PHYSICAL EDUCATION 55 (Gymnasium Work 1).—Practical work in graduated exercise, progressive and corrective gymnastics including heavy apparatus and elementary normal dancing.

3 hours a week; first semester, credit 1 unit.

HEALTH EDUCATION

Assistant Professor URSULA B. UICHANCO

Health Education 1; *PERSONAL HYGIENE*.—The course consists of lectures and recitations on the proper care of the human body including some practical demonstrations of the structure and function of the different parts or organs to serve as a background for the practical teaching of personal hygiene. This course is intended to suit the needs of health teachers in the elementary and secondary schools of the Philippine Islands.

3 hours a week; first semester; credit 3 units.

Health Education 2; *ELEMENTARY BACTERIOLOGY AND PARASITOLOGY*.—This course deals with the study of some microscopic organisms, particularly the most common disease-producing ones. The course is intended to give a general idea of what parasitic bacteria, protozoans, worms and insects look like. Their life history is discussed. A few demonstrations on the reactions of the body toward bacterial invasion are made. Lectures, demonstrations, recitations, and laboratory work.

6 hours a week; second semester; credit 4 units.

Health Education 3; *CHEMICAL HYGIENE AND NUTRITION*.—This course is intended to give health education students a general idea of nutritional diseases and their prevention. The diet in health and disease, as well as the misbranding and the adulteration of food products, are also taken up including discussions of proprietary medicines and patented cure-alls. The course consists of lectures, recitations, demonstrations, and laboratory work.

Prerequisites: Health Education 1 and Chemistry.

4 hours a week; credit 3 units.

Health Education 4; *EPIDEMIOLOGY*.—Prevention and control of communicable diseases. The sources of infection and the modes of transmission of some of the most common communicable diseases are taken up and their prevention and control discussed. Lectures, recitations, and practical demonstrations.

Prerequisites: Health Education 1 and 2.

3 hours a week; credit 3 units.

Health Education 5; *CHILD AND MATERNAL HYGIENE*.—This course deals with the special care of the mother and the child. It also includes instruction on the objective manifestations of the abnormal conditions in children and mothers. Lectures, recitations, and practical demonstrations.

3 hours a week; credit 3 units.

Health Education 6; *PUBLIC HYGIENE AND SANITATION*.—This course deals with the study of the methods and systems for the prevention and control of community diseases with special emphasis laid on safe water supplies, proper method of excreta disposal, collection and disposal of refuse, fly and mosquito control, including medical relief and welfare work. Lectures, recitations, and practical demonstrations.

Prerequisites: Health Education 1, 2, 3, 4, and 5.

3 hours a week; credit 3 units.

For courses not given in the College of Education see the Catalogue of the College of Liberal Arts, page 27 and following.



UNIVERSITY HIGH SCHOOL

OFFICERS OF ADMINISTRATION

Dean of the College: Dr. FRANCISCO BENITEZ.

Principal: Professor JUAN C. CANAVE.

Librarian: Miss REMEDIOS AVENDAÑO.

Clerk: EUGENIO MANDAPAT.

FACULTY OF INSTRUCTION

JUAN C. CANAVE, B.S., B.S.E., M.A.,
Assistant Professor of Education and Principal.

CONSUELO BARRERA, A.B., B.S.E.,
Assistant Professor of English.

JOSE AÑONUEVO, A.B.,
Instructor.

DEOGRACIAS BORLONGAN, B.S.E., M.A.,
Instructor.

JUAN L. DE LA CRUZ, B.S.E.,
Instructor.

JOSEPHINE MILES, B.A.,¹
Instructor.

VITO DEL FIERRO, Ph.B., B.S.E.,
Instructor.

MARCELA IGNACIO, A.B., H.T.C.,
Instructor in Education.

ANICETO B. FABIA, Ph.B., B.S.E.,
Instructor in Education.

ANTONIO ISIDRO, B.S.E., M.A.,
Instructor in Education.

WILFRIDO MACEDA, B.S.E.,
Instructor in Education.

PABLO S. TECSON, B.S.M.E., M.S.,
Instructor in Physics.

CIRILO MAGTIRA, B.S.E.,
Instructor.

JOSEFINA ESTRADA, B.S.E.,
Instructor.

ASUNCION GIRON-PANLASIGUI, B.S.E.,
Instructor.

DELFINA SAN AGUSTIN, B.S.E.,
Instructor.

UNIVERSITY HIGH SCHOOL

AIMS

In July, 1916, the University High School was established in connection with the College of Education in order to provide classes for practice teaching and for the study of problems in education. It also prepares students for higher education.

ADMISSION REQUIREMENTS

Applicants for admission should be graduates of an accredited intermediate school. They should present their identification cards for transfer upon matriculation.

COURSE OF STUDY

The following course of study prescribed for public secondary schools is followed, except when the special purposes of the school necessitate the modification of the course:

First Year	Second Year	Third Year		Fourth Year
Literature (4). Current Events (1).	Literature and Composition (5).	Literature and Composition (5).		Literature and Composition (5).
Composition (5).	General Science (5).	Biology (5D).		Economic Conditions in the Philippines (5).
United States History (3). Government (2).	General History (4). Current Events (1).	General History (4). Current Events (1).		Philippine History and Government (4). Current Events (1).
Algebra (5).	Geometry (5).	Advanced Algebra (5).	Review Arithmetic (5).	Physics (5D). or Chemistry.
Physical Education. Military Science (2). Group Games (3).	Physical Education. Military Science (2). Group Games (3).	Physical Education. Military Science (2). Group Games (3).		Physical Education. Military Science (2). Group Games (3).

Optional Subjects

Music.	Music.	Spanish (5). Music.	Spanish (5). Music.
--------	--------	---------------------	---------------------

HOUSEHOLD SCIENCE AND ARTS COURSE

Required Subjects

First Year	Second Year	Third Year	Fourth Year
Literature (4). Current Events (1).	Literature and Com- position (5).	Literature and Com- position (5).	Literature and Com- position (5).
Composition (5).	General Science (5).	Biology (5).	Economic Conditions in the Philippines (5).
United States History (3). U. S. Government (2).	General History (4). Current Events (1).	General History (4). Current Events (1).	Philippine History and Government (4). Current Events (1).
Household Science and Arts (5D).	Household Science and Arts (5D).	Household Science and Arts (5D).	Household Science and Arts (5D).
Physical Education (3).	Physical Education (3).	Physical Education (3).	Physical Education (3).

The College of Engineering

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Dean of the College: Professor EDWARD R. HYDE.

Secretary of the College: Professor HERMENEGILDO B. REYES.

CLERKS

Chief Clerk: Mr. MAXIMO PARGAS.

Property Clerk: Mr. GREGORIO PINEDA.

Clerks: Mr. ARCADIO VILLAMEJOR.

Mr. ALBINO FABIAN.

BUSINESS DIRECTORY

ADMINISTRATION OFFICES—The offices of the Dean and the Secretary are on the first floor of the Engineering Building, which is located at the center of the side of the University Campus facing Florida street. Entrance to the building is directly facing Arkansas street.

Entrance to the administration offices is by Room No. 5 of the Engineering Building.

TELEPHONE CONNECTIONS—The offices in the College of Engineering may be reached, during regular office hours, through Telephone No. 5-69-21, and the following local numbers:

Office of the Dean	Local No. 45
Office of the Secretary and Clerks	" " 40
Department of Civil Engineering	" " 60
Department of Electrical Engineering	" " 51
Department of Mechanical Engineering	" " 46
Property Clerk of the College	" " 31

After office hours, the offices of the Dean and Secretary may be reached directly through No. 5-69-25.

CORRESPONDENCE—Address all communications to the Dean, College of Engineering, University of the Philippines, Manila, P. I.

FACULTY OF INSTRUCTION

COLLEGE OF ENGINEERING

EDWARD RUDDOCK HYDE, B.S.C.E.,

Dean of the College, Professor and Head of the Department of Civil Engineering.

HERMENEGILDO B. REYES, A.B., M.E. (E.E.), M.M.E.,

Secretary of the College, Professor and Head of the Department of Electrical Engineering.

LEON SCHULTZ EATON, M.E.,

Professor and Head of the Department of Mechanical Engineering.

AMBROSIO MAGSAYSAY, C.E.,

Professor of Civil Engineering.

RAMON MARIANO, M.E.,

Professor of Mechanical Engineering. In charge of Mechanical Laboratory.

TEOFILO REYES, A.B., C.E., LL.B.,

Professor of Civil Engineering.

MARIANO F. MANGUERRA, C.E.,

Associate Professor of Civil Engineering.

FELIPE R. ROMAN, B.S.M.E.,

Associate Professor of Mechanical Engineering.

JUAN L. TIONGSON, B.S.M.E., M.S.M.E., M.E.E.,

Associate Professor of Electrical Engineering.

ESTANISLAO P. ANGELES, B.S.M.E., M.S.M.E.,*

Assistant Professor of Mechanical Engineering.

MENELEO CARLOS, A.B., M.E.,

Assistant Professor of Electrical Engineering.

PRUDENCIO F. ESQUIVEL, B.S.C.E., M.S.I.,

Assistant Professor of Civil Engineering. In charge of the Hydraulic Laboratory.

ALEJANDRO MELCHOR, B.S.C.E.,

Assistant Professor of Civil Engineering.

CRISOSTOMO ORTIGAS, B.S.M.E.,

Assistant Professor of Mechanical Engineering.

FRANCISCO T. SUNICO, A.B., M.E., E.E.,

Assistant Professor of Electrical Engineering.

SERAFIN A. JUSTO,

Assistant in Wood Shop.

PEDRO EBALO,

Assistant in Forge and Machine Shops.

Note:—See also the Faculty of the College of Liberal Arts.

* On Leave as Fellow in the U. S.

The College of Engineering

GENERAL INFORMATION

The College of Engineering was opened and instruction in the first year of the Civil Engineering course was begun on June 13, 1910. On July 12, 1915, the Board of Regents authorized the adoption of courses in Mechanical and Electrical Engineering. Each of these courses lead to the degree of Bachelor of Science in their respective lines, and in each case, the course requires four years. The work of the first year is the same for the three courses so that the student is not required to select the particular branch of engineering he desires to enter until the beginning of the second year. Entrance examinations and requirements are the same for the three courses, and are described under the corresponding headings.

PURPOSE OF THE COLLEGE

In view of the vast undeveloped resources of the Philippine Islands, it is important that the young men of this country have the means of acquiring a broad technical education. In order to accomplish this purpose, the curriculum of each department of the College of Engineering is so designed that the graduate is thoroughly grounded not only in the principles and applications of the subjects in the particular branch of engineering that he has chosen, but also in the fundamentals of such subjects in other branches of engineering as he may need in the performance of his work as engineer.

LABORATORY FACILITIES

The various laboratories are equipped with machines, apparatus and instruments in sufficient amount as to give each student an opportunity to do individual laboratory work. New equipment is being added from time to time by purchase and also is being built in our shops by our mechanics from designs of members of the faculty.

MECHANICAL ENGINEERING EQUIPMENT

The Steam Laboratory.—This laboratory contains one 50 H. P. Corliss Engine, one 25 H. P. Bromwell slide Valve Engine of the throttle governor type, and one 10 H. P. Ames engine of the cut-off governor type. A surface condenser may be used with either of these engines. There are also one De Laval steam turbine, one Worthington belt driven two stage air compressor, duplex steam pump, injectors, calorimeters of the throttling and separating types, gauges, indicators, dynamometers and other instruments provided for testing.

The boiler section of this laboratory consists of one 104 H. P. water tube boiler of the Walsh and Widner Cross Drum type, equipped with duplex steam pump, injector, CO₂ recorder, flue gas apparatus, gauges, pyrometer, set of scales and measuring tanks.

The Gas Engine Laboratory.—This laboratory contains one-16 H. P. Ruston full Diesel engine, one 30 H. P. Bolinder Marine crude oil engine, one 10 H. P. Fairbanks Morse crude oil engine; one 4 H. P. Fairbanks Morse kerosene engine, one Dodge gasoline engine, and an Eriscon hot air machine. Also an ammonia ice making machine, a centrifugal fan and a belt testing machine are installed in this laboratory.

The Fuel and Lubricants Testing Laboratory.—This laboratory contains a Junker's calorimeter for determining the heat value of gas and gasoline; an Emerson calorimeter for determining the heat value of coals and fuel oils; an Orsat apparatus for flue gas analysis and the necessary apparatus for the proximate analysis of coals. For making the usual physical test of lubricants, the equipment includes: a Thurston oil-testing machine, one viscosimeter of the Carpenter type and apparatus for determining the flash and burning points of oils.

The Metallography Laboratory.—This laboratory contains equipment for the preparation, etching, and photomicrographing of all metals. There are a polishing machine, three microscopes and camera attachment, and a large collection of metals whose physical properties and chemical compositions are known. Also crucible, gas and electric furnaces for melting, hot-working, and heat treating metals.

Equipment for testing physical properties consists of a Brinell Hardness Tester and Pittsburg Extention Machine together with a tension testing machine and a scleroscope loaned by the Bureau of Science.

ELECTRICAL ENGINEERING EQUIPMENT

The Direct Current Laboratory.—This laboratory is provided with a 15 Kw. D. C. Generator direct connected to a 25 H. P. squirrel cage induction motor; three 5 Kw. D. C. generators of various types and characteristics; one 5 H. P. motor; one 5 H. P. crane motor; one 30 H. P. D. C. torque dynamometer; storage batteries, lead and Edison types; mercury are rectifier; the necessary meters and control equipment, and standard meters for calibration.

The Alternating Current Laboratory.—This laboratory is equipped with two alternating current machines of special make which may be connected as a single phase, two-phase, three-phase, or six-phase alternators. They are provided with different kinds of rotor and may be run also as synchronous motors and as induction motors. In this laboratory, there is also a phase displacement dynamometer; a 12 Kw. alternator driven by a 25 H.P. D.C. motor; a rotary converter; three single-phase 3-Kva. transformers (220/2200 volts); two 5-Kva. transformers that may be connected in Scott; two special 4.40 Kva. transformers, each having sixteen coils with terminals brought out to a plug-board and especially adapted for study of transformer leakage and coil interconnections; one constant current regulating transformer "Station Type" of 4 Kva. rating; one high voltage testing equipment, complete with high voltage testing transformer, auto-transformer, hand operated induction regulator, etc., up to

50,000 volts, 10 Kva; one phase advancer for power factor correction and other purposes; one $\frac{3}{4}$ H. P. induction motor with milled-out rotor for synchronous speed; one 2.2 H.P. induction motor with all the coil terminals brought out for practice in the connection of induction motor windings; one 2.2 Kva. induction voltage regulator; various meters and control equipment, and standard meters for calibration. Also variable resistors, reactors and static condensers for loading purposes.

CIVIL ENGINEERING EQUIPMENT

Surveying.—The department has numerous transits, wye levels, dumpy levels, plane tables, rods, tapes, etc. to enable each student to obtain frequent practice in their use. There are also a theodolite, sextants, a solar attachment, a current meter, a pedometer, an odometer, compasses, hand levels, etc. for occasional instructions in special branches of surveying.

The Cement Testing Laboratory.—This Laboratory contains a complete equipment for the physical tests of Portland Cement, such as the Vicat and Gillmore needles, the Le Chatelier apparatus, briquettes testing apparatus, gang moulds, steam apparatus for accelerated soundness test, standard wire mesh for fineness, etc.

For the testing of structural materials the testing machine belonging to the Bureau of Science is used, also a complete equipment is used for the testing of road materials.

The Hydraulic Laboratory.—This laboratory contains centrifugal pumps arranged for testing, venturi meter, Pitot tubes, current meter, weirs, nozzles, hydraulic ram, Pelton wheel and pipes arranged for the study of the loss of head due to friction.

ENGINEERING SHOPS

These comprise the wood, forge and machine shops. The wood shop is adequately equipped to accommodate 12 men on both bench work and wood-turning; and has in addition a trimmer, band saw, surfacer, and circular-saw table. Flasks and complementary equipment are provided for the green-sand molding of patterns as they are made. The main part of the forge shop is located outside the buildings, and consists of anvils, forges, vises, and a full complement of hand tools. Equipment for instruction in soldering, brazing and gas welding is located inside. The machine shop equipment consists of 12" and 14" lathes, a 12" shaper, a universal milling machine, two upright drills, a sensitive drill, a universal tool grinder, emery wheels, a grindstone, and a rather complete assortment of small tools for machine and bench work.

SUMMER SURVEYING

Since 1921 the summer school has been discontinued and in its stead the students who have completed the third year in the course in Civil Engineering have been given work during their summer vacation with the Bureau of Public Works where they have the benefit of being engaged in surveying problems connected with practical engineering work. This procedure has been very successful and it is hoped the arrangement will be continued.

ADMISSION

Applications for admission are received in the College of Engineering from three classes of candidates: (a) Persons who desire to pursue a regular course of study leading to a degree. (b) students who, having already attended some institution of collegiate rank, desire advanced standing in a regular course; (c) special students, not candidates for a degree. For further particulars, see the General Catalog, Bulletin No. 15.

ENTRANCE REQUIREMENTS

General Entrance Requirements.—Students entering the College of Engineering, or the School of Surveying must be graduates of a four-year high school recognized by the Secretary of Public Instruction, or must have completed an equivalent education calling for at least 16 units of credit. These applicants must present for entrance the following subjects:—

GROUP A		Units
1. English		5
2. History		2
3. Mathematics		2½
4. Biology		1
5. Physics or Chemistry		1
Total		11½

Provided that students entering the College of Engineering must present an additional ½ unit in solid geometry.

GROUP B

To make up the total number of high-school units required for entrance, history, government, botany, zoology, chemistry, physiology, mathematics, language, literature, economics, general science, geography, psychology, pedagogy, agriculture, bookkeeping, business law, domestic science, drawing, manual training, or music may be offered.

ENTRANCE DEFICIENCY

Students deficient in any of the subjects required for admission who may, in spite of such deficiencies, be admitted to any college by the faculty concerned, *must make up all deficiencies within one year.*

ENTRANCE EXAMINATIONS

a. *Type A.*—Besides graduation from a four-year high school, students intending to matriculate in the College of Engineering, or School of Surveying, are required to take the Type A examination. This examination consists of the following subjects:

Subjects	Weight
English and Composition.....	200
Mathematics	100
History	100

Physics	100
Biology	100
Intelligence Test.....	100
<hr/>	
Total	700

However, students applying for admission to the College of Engineering who have completed at least two years of an engineering course in an institution recognized by the Secretary of Public Instruction, are exempt from this examination; provided, however, that whatever advanced credits may be given them shall be determined by the department heads concerned in accordance with the existing rules of the University.

No student failing in Mathematics and Physics will be admitted to the College of Engineering, and in ranking the general average for admission to this college, Physics and Mathematics shall have the same weight each as English.

Students who fail in the entrance test in Mathematics are required to take and pass Mathematics A.

Students who fail in the entrance test in Physics must take and pass Physics A before they can be admitted to any class in college Physics.

SELECTION OF NEW STUDENTS

If the number of applicants for admission in any academic year, who have taken the entrance examinations and may be qualified to enter the College of Engineering in accordance with the University rules, exceeds the quota of new students that can be admitted to the College of Engineering, the approved quota will be filled in the following order:

First. From the list of those students who have passed the entrance tests in both Mathematics and Physics.

Second. From the list of those who have passed the entrance test in either Mathematics or Physics, but failed in the other. It being understood that the quota should be filled in from those who obtained the highest general average in the entrance tests in the case that the number included in the list exceeds that which can be accommodated to fill the quota.

PHYSICAL AND MEDICAL EXAMINATIONS

All students of the University are required to submit themselves for a physical examination at the beginning of the academic year, and a medical examination at the beginning of each semester. These examinations are prerequisites to registration, and the corresponding certificates must be obtained before any student is allowed to register in any semester.

CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking one examination during the week preceding the opening of the following session or any other examination required by the faculty without the payment of a fee. Examination may be held at other times only by special permission of the faculty and on payment of ₦10, provided that all conditions must be made up before the opening of the following session.

Students not in residence and who are permitted to take an examination for removal of condition shall be required to pay the registration fee of ₱5 and such other fees as may be required by the Registrar.

Any student who is reported as having failed in a given subject of study or after being conditioned, does not pass a second examination for the removal of the condition, will have to repeat every such subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit him to review a subject in which he is thus conditioned with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or semester.

Any student who has been reported with a grade of *Incomplete* or a grade of 4, who does not within a year better such grades will automatically be recorded as having failed in such subjects. Any student who, for reasons of poor scholarship, is dropped with the approval of the Dean from any subject of study by the instructor, will be given a grade of 5 in that subject, unless the faculty shall otherwise determine.

No candidate is to be recommended by the Council for any degree, title, or certificate until all required examinations have been passed.

The Faculty of the College of Engineering laid down the following rule regarding examinations for the removal of conditions:

"A student who has a grade of 4 in any course given by the College of Engineering proper is required to take the examination for the removal of conditions before the beginning of the next semester in which the course is offered, otherwise, he shall be required to enroll in the course during that semester. If, however, the student is granted a leave of absence during this semester, he will be allowed to remove his condition by taking the regular final examination at the end of the semester."

RULES ON ATTENDANCE

1. The rules on attendance herein laid down shall be followed in all the schools and colleges including the Department of Military Science and Physical Education.

2. No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean or director of the college concerned; provided, that no student may matriculate in a college or school or enroll in a course later than two weeks after classes begin. A college or school, or department, to meet special conditions, may shorten this period of extension.

3. Any student, who for unavoidable cause, is obliged to absent himself from any college, or required university class must obtain an excuse written on U. P. Form No. 97 from his dean or director to be presented to his instructors.

4. Excuses for absence shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

5. Excuses are for time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

6. When the number of hours lost by absence by a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any other scheduled work in one subject for that semester, he shall be dropped from the class roll with grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

7. Instructors shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

8. A student shall be given a grade of incomplete in a course if he is absent from the final examination, provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of his dean or director.

9. Any student who drops a course or withdraws from a college or school without the approval of his dean or director shall be subject to curtailment of registration privileges. Prolonged leave of absence must be sought by written petition to the dean or director, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired; provided, however, that the student granted leave under this clause shall be subject to the scholarship rules of the college of school where he is duly registered. Indefinite leave of absence shall not be granted.

10. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to his dean or director. If the petition is granted the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall file with the dean or director of his college or school. Without such petition and favorable action no record of honorable dismissal will be made.

11. Attendance in the Graduate School shall not be governed by the foregoing rules.

12. Certificates of absences due to illness must be secured from the University physician.

SUBSTITUTION OF CREDITS

Substitution of credits in one subject for another may be made only under the following conditions:

1. Must be recommended by adviser, if any, and by the heads of departments and deans concerned;

2. Must be approved by the Curriculum Committee of the University Council;

3. Must be within the same department, if possible; if not, the two subjects concerned must be allied to each other;

4. The subject to be taken in lieu of the required subject must carry at least the same number of units as the latter;

5. Must be on one of the following grounds only:

(1) When a student is pursuing a curriculum that has been superseded by a new one and the substitution tends to bring the old curriculum in line with the new one;

(2) Conflict of hours between a required subject and another required subject;

(3) When the required subject is not given.

6. Exceptional cases not covered under any of the above rules may be allowed upon the recommendation of the faculty of the college or school concerned and upon the approval of the Curriculum Committee by two third votes of the members present.

ADMISSION OF SPECIAL STUDENTS FOREIGN STUDENTS ADMISSION TO ADVANCED STANDING CREDITS UNIVERSITY INFIRMARY

For information on the above subjects and requirements, see the Bulletin No. 15, General Catalog.

SCHOLARSHIPS

A valedictory scholarship with free tuition fee for a period of one academic year is granted to the student highest in rank (valedictorian) graduating from a standard four-year high school, trade school, commercial school, or other private school of the same standing in the Philippines.

A salutatory scholarship with free tuition fee for a period of one academic year, is also granted to the student second in rank (salutatorian) graduating from the schools mentioned in the preceding paragraph.

Formal application for these scholarships should be made in writing before registration, and the application should be accompanied by a certificate signed by the principal or by the director of the school from which the applicant has graduated. These scholarships are granted only on condition that the student meets all the requirements for admission to this University.

REGULATIONS GOVERNING THE BAILON-DE LA RAMA SCHOLARSHIP

I. General Rules

1. Awards of any scholarship under this fund shall be made to those who obtain the highest general average in examinations given for the purpose.

2. Only needy students will be admitted to participate in these competitive examinations, and to prove that they deserve the support, they must submit to the Chairman of the Bailon-De la Rama Scholarship Committee at least two weeks before the date set for the examination, three certificates, one, signed by the Municipal Treasurer of the town in which the applicants reside, another, by the Principal of the High School from which they graduated; and a third by the Provincial Treasurer, showing that they really belong to the class of the needy.

3. All examinations for the Bailon-De la Rama scholarship will be held on the first Monday and Tuesday of June of each year, or in case of vacancy, at such time as may be set by the Bailon-De la Rama Scholarship Committee.

4. The sum of ₱50 a month will be given to each beneficiary studying in Manila and ₱35 to each beneficiary studying in Los Baños while in attendance at the University for the required study. An additional amount of ₱75 shall be given each beneficiary for expenses of books and tuition at the beginning of each semester.

5. The beneficiary shall continue to hold the scholarship until completion of the course; but the scholarship will be terminated upon failure of the holder thereof in any subject required for the course, or for any reason of misconduct or misbehaviour

II. Rules Governing Competitive Examinations

1. Qualifications of applicants:

x x x x x x x

d. *Engineering*.—Completion of all entrance requirements to the College of Engineering and of the first year of the engineering course. (This means that only students who have completed a four-year high school course and the first-year course in Engineering will be admitted. Moreover, students coming from other institutions must have taken type A entrance test for the College of Engineering and qualified for entrance into this college.)

2. Subjects given in the competitive test:

x x x x x x x

d. *Engineering*.—Those competing for the scholarship in engineering will take the test in the following:

Subjects	Weight Per cent
Mathematics (including elementary and college algebra, plane and solid geometry, trigonometry and analytic geometry)	40
English	20
Drawing	20
Elementary Physics	20

REGISTRATION OF STUDENTS

Students in all undergraduate courses must register for work in each college at the time prescribed by their college. To promote prompt registration, a fee of ₱5 is charged to those who seek to register later than

the specific date of registration unless previously excused by the president of the University.

All fees and deposits must be paid on matriculation and before admission to classes.

No person will be admitted as a student to the exercises of any instructor except as authorized by the official certificate of registration furnished to each student by the dean or registrar.

FEES

Every regular student in the College of Engineering is charged with the following:

Entrance fee (paid only once, upon first registration) .	₱5.00
Registration fee—per semester	5.00
Tuition—per semester	30.00
Athletic fee—per semester	1.50
Library fee—per year	5.00
<i>Philippine Collegian</i> —per semester	1.00
University Student Council—per semester .....	.50
Medical fee—per semester	2.00

Any student enrolled in the College of Engineering or School of Surveying, who does not carry a full load shall pay tuition fee in accordance with the following schedule: (1) Thesis or five clock hours of work or less a week, ₱10; (2) more than five clock hours of work but not exceeding 10, ₱20; (3) more than ten, ₱30.

For change of matriculation; that is, enrollment for additional subject, substitution of one subject for another, or for dropping of a subject, a fee of ₱1 is charged.

A fine of ₱2 is charged for unauthorized dropping of subject. Upon failure of the student to pay this amount, the same will be deducted from his deposit.

A fee of ₱5 is charged for change of registration from one college to another.

LABORATORY FEES

In addition to the above fees, students are required to pay laboratory fees for the laboratory courses in which they are enrolled as follows:

Chemistry 25—per semester	₱15.00
Physics 33 and 34, each	5.00
Geology 103	5.00
Shop 211 and 212 (Wood Shop), each	5.00
Shop 221 (Forge Shop)	5.00
Shop 223 (Machine Shop)	5.00
C. E. 312 (Testing Laboratory)	5.00
C. E. 323 (Testing of cement and concrete)	5.00
C. E. 416 (Hydraulic Laboratory)	5.00
C. E. 428 (Hydraulic Laboratory)	5.00
M. E. 316 (Mech. Lab.)	5.00
M. E. 318 (Metallography)	5.00
M. E. 319 (Mech. Lab.)	5.00
M. E. 326 (Mech. Lab.)	5.00
M. E. 421 (Mech. Lab.)	5.00
E. E. 312 (Direct Current Lab.)	5.00
E. E. 318 (Short D. C. Lab.)	5.00
E. E. 322 (Alter. Current Lab.)	5.00

E. E. 328 (Short A. C. Lab.)	5.00
E. E. 412 (Adv. Elec. Lab.)	5.00
E. E. 415 (Elec. Communication Eng.)	5.00
E. E. 422 (Adv. Elec. Lab.)	5.00

DEPOSIT

Each student of the College and the School of Surveying, is required to deposit \$15 in addition to the regular fees with the Secretary-Treasurer of the University, on matriculation.

This deposit is to cover any loss of apparatus, supplies, books, etc., or any damage to University property which may properly become a charge against the students.

FACULTY ADVISERS

Each student of the College of Engineering is assigned to a member of the Faculty who acts as his adviser and gives him advice and information concerning his courses of study, the subjects for matriculation and his college work in general.

The student should freely consult with his adviser on any matter pertaining to his work, specially during the period of registration.

STUDENTS' CLASSIFICATION

For purposes of administration and advising, all the students of the College of Engineering are classified at the beginning of the academic year into first, second, third and fourth year, in accordance with the following rules approved by the Faculty on April 21, 1925.

1. A student will be classified as sophomore only after having completed not less than 75 per cent of the freshman subjects, including freshman mathematics.

2. A student will be classified as a junior only after having passed not less than 75 per cent of the units in the sophomore year, including sophomore mathematics and physics.

3. A student will be classified as senior only after having completed not less than 75 per cent of the units in the junior year, including mechanics.

SCHOLARSHIP RULES

The following rules governing scholarship are enforced in the College of Engineering, beginning with the first semester of the academic year 1929-1930:

1. A student whose *mid-semester* grades show that he has passed less than 12 units shall be given notice to the effect that his work has not been satisfactory and shall be warned that (unless he improves at the end of the semester) he may eventually be dismissed from the College of Engineering as prescribed by rules 3 and 4. Copy of the notice shall be sent to his parents or guardian.

2. A student whose *semester grades* show that he has passed less than 12 units shall be placed on probation during the following semester that he enrolls in the College of Engineering. (The removal of a grade of "4" at the beginning of the semester shall not change the probational status of a student.)

3. A student on probation whose *semester grades* show that he has passed less than 12 units shall be dismissed from the College of Engineering; otherwise he ceases to be on probation.

4. A student whose *semester grades* show that he has passed only 7 units or less shall be dismissed from the College of Engineering.

5. The effect of the foregoing rules shall be waived in the case of students taking less than 12 units, provided they pass all the subjects taken.

6. The phrase "has passed" shall be construed to mean "has obtained a grade of 1, 2, 3, or incomplete."

7. In counting the number of units passed, all subjects in which a student is registered shall be included whether or not these subjects are prescribed in the curricula of the College of Engineering. Furthermore, the following subjects shall be given weights as follows:

	Units
Mathematics 0	3
Mathematics A	3
Physics 1	4 1/3

8. The Scholarship Committee shall be vested with sole power to act under the provision of rules 1 and 2; provided, however, that it shall be the duty of the said committee to submit to the Faculty of the College of Engineering for confirmation any action taken on cases falling under rule 3 or rule 4, which Faculty shall have the power to annul the action taken, by at least 2/3 of the votes of the members voting.

GRADUATION WITH HONORS

There shall be three kinds of "honors" to be awarded to students of the College of Engineering, which honors shall be entered on the Diploma of the corresponding students, as follows:

(a) "Cum laude" to those students who at the time of graduation have a general average, based on the number of units, of 1.60 to 1.401.

(b) "Magna cum laude" to those who obtain a general average of 1.40 to 1.251.

(c) "Suma cum laude" to those who obtain a general average of 1.25 to 1.00.

In the computation of the averages, only academic courses earned while the student is enrolled in the College of Engineering shall be included, and will be done as follows: The number of units is to be multiplied by the number of the grade obtained, and the sum of the products divided by the total number of units.

No student shall be eligible for graduation with honors:

(a) Who has ever obtained a grade of "4" or "5" in any academic course taken while enrolled in the College of Engineering, be it elective or required; or, in any other college or university, if such a course is required for graduation in the College of Engineering.

(b) Who has obtained a grade of "3" in more than 10 per cent of the units taken while enrolled in the College of Engineering for "magna cum laude" and "suma cum laude," and more than 15 per cent for "cum laude."

(c) Who has ever been dropped from any course while enrolled in this College, because of unsatisfactory work.

(d) Who has ever been suspended or expelled from any college of this University.

(e) Unless he has earned while enrolled in this College 70 or more units required for graduation "cum laude," 100 or more units required for graduation "magna cum laude" or all the units for graduation "suma cum laude."

MILITARY SCIENCE

Military Science and Tactics is a required subject in the curricula of all the colleges of the University. It is a prerequisite for graduation and must be completed during the first two years of residence in the University. For further particulars, see Bulletin No. 15, General Catalog.

PHYSICAL EDUCATION

All students of the University, except those exempted by proper authority, are required to take physical training during their years of residence in the University. For further particulars, see Bulletin No. 15, General Catalog.

Semestral Courses of Instruction

COLLEGE OF LIBERAL ARTS

DEPARTMENT OF CHEMISTRY

Chemistry 25; *GENERAL AND INORGANIC CHEMISTRY* (For Engineering).—A course giving the essentials of general inorganic college chemistry, designed primarily for engineering students. Special attention is given to the chemistry of metals and construction materials. The latter part of the course is devoted exclusively to a brief course in qualitative inorganic analysis.

Lectures, recitations, and laboratory work.

Lectures: M-W-F—9 to 10.

Textbook: Clemente, A., *General Chemistry*; Quisumbing, F. A., *Qualitative Chemical Analysis*.

Laboratory Manual: Clemente, A.; *General Chemistry*.

9 hours a week (6 Lab., 3 Class); throughout the year, credit 10 units.

DEPARTMENT OF ENGLISH

English 1; *COMPOSITION*.—Study of forms and principles; writing and revision of themes; collateral reading. Prerequisite to all other courses in English.

3 hours a week (Class); both semesters, credit 6 units.

English 7; *SCIENTIFIC EXPOSITION*.—Study and practice of exposition, with special reference to the needs of scientific and professional students. Prescribed for engineering students.

Prerequisite: English 1.

2 hours a week (Class); either semester, credit 2 units.

DEPARTMENT OF GEOLOGY

Geology 103; *GENERAL GEOLOGY FOR ENGINEERING STUDENTS*.—(Prerequisite: Chemistry 25 or 27 or equivalents).—A general course covering general and economic geology and the elements of mineralogy; consisting of lectures, laboratory periods, recitations, and occasional field trips.

7 hours a week (Lecture, class, laboratory); either semester, credit 3 units.

DEPARTMENT OF MATHEMATICS

Mathematics 11; *COLLEGE ALGEBRA, TRIGONOMETRY, AND ANALYTIC GEOMETRY*.—A continuous course running throughout the year and combining work in college algebra, plane and spherical trigonometry, and analytic geometry in manner adapted to the special needs of engineering students. For further information, see Mathematics under the College of Liberal Arts.

5 hours a week (Class); first semester; credit 5 units.

Mathematics 12.—Continuation of Mathematics 11.

5 hours a week (Class); second semester; credit 5 units.

Mathematics 21; *CALCULUS I*.—A continuous course throughout the year covering differential and integral calculus in a manner adapted to the special needs of engineering students. For further particulars, see Mathematics under the College of Liberal Arts.

5 hours a week (Class); first semester; credit 5 units.

Mathematics 22; *CALCULUS II*.—Continuation of Mathematics 21.

5 hours a week (Class); second semester; credit 5 units.

DEPARTMENT OF PHYSICS

Physics 33; *GENERAL PHYSICS* (Prerequisites: Physics A, or its equivalent, and Mathematics 4)—A general first-year course in college physics. It embraces lecture, quizzes, laboratory work, and the solution of problems illustrating the application of Physics to engineering.

9 hours a week (6 Lab., 3 Lect.); first semester, credit 5 units.

Physics 34; *GENERAL PHYSICS* (Prerequisites: Physics A, or its equivalent, Mathematics 4, and Physics 33, first semester).—This course is a continuation of the one immediately above.

9 hours a week (6 Lab., 3 Lect.); second semester, credit 5 units.

INTRODUCTION TO SOCIAL SCIENCE

This course is given by the College of Liberal Arts with the cooperation of the College of Education. The cooperating departments are Political Science, Philosophy, Psychology, Anthropology and Sociology, History, Economics, Education, and Library Science.

Social Science 1; *INTRODUCTION TO SOCIAL SCIENCE (FIRST PART)*.—Work in the first part takes up man's relation with nature, his traits, peculiarities, and ideals, and the historical background of present civilization, with emphasis on the cultural development.

3 hours a week (Lectures and class); either semester; credit 3 units.

Social Science 2; *INTRODUCTION TO SOCIAL SCIENCE (SECOND PART)*.—This course, which should follow Social Science 1 introduces the student to elementary problems in political science and economics, and discusses the fundamental economic, educational and political questions of the Philippines, with special emphasis on the political development of the people and their relations with the United States.

3 hours a week (Lectures and class); either semester; credit 3 units.

[NOTE.—Engineering students may select either one year of Social Science or Spanish.]

DEPARTMENT OF SPANISH

Spanish 10; *ELEMENTARY SPANISH*.

Spanish 11; *ELEMENTARY SPANISH*.—A study of the elements of the Spanish language, with reading and exercises in conversation and composition.

Textbook: Moreno-Lacalle's *Elementos de Español*.

The two courses of one semester each, constitute a year course, with credit of 6 units divisible into two semestral courses of 3 units each.

Prerequisite for Spanish 11: Spanish 10.

3 hours a week (Class); either semester.

DEPARTMENT OF ZOOLOGY

Zoology 3; *BIOLOGICAL PROBLEMS IN ENGINEERING*.—A brief course treating the biological problems involved in construction, water supply, sewerage, and sanitation.

1 hour a week (Class); one semester; credit 1 unit.

COLLEGE OF ENGINEERING

ENGINEERING LECTURES

ENGINEERING LECTURES.—This course is designed especially for Freshmen and its purpose is to show them what engineering is and the scope of its field. The lectures are nontechnical.

1 hour a week (Lecture); first semester; credit 0 unit.

ENGINEERING DRAWING

Drawing 111; *MECHANICAL DRAWING*.—Upper and lower case lettering; selection, care, and use of instruments; applied geometry and orthographic projection.

Textbook: Engineering Drawing, by French.

6 hours a week (Drawing); first semester; credit 2 units.

Drawing 121; *MECHANICAL DRAWING*.—Continuation of Drawing 111. Developed surfaces and intersection; isometric and oblique representation: machine fastening; sketching, drawing, and tracing of machine parts; structural drawing.

Textbook: Engineering Drawing, by French.

6 hours a week (Drawing); second semester; credit 2 units.

ENGINEERING SHOPS

Shop 211; *PATTERN MAKING*.—A few introductory exercises are given, to acquaint the students with bench and wood-turning tools. These are followed by the construction of cored, as well as simple, patterns. Greensand molds are made from some patterns. Occasional quizzes are given on this work; and also on the nature, preparation and use of native woods. For mechanical and electrical engineering students.

Prerequisite: Drawing 121.

Textbook: Pattern Making by McCaslin.

6 hours a week (Laboratory); first semester; credit, 2 units.

Shop 212; *JOINERY & WOOD-TURNING*.—A few introductory exercises are given to acquaint the students with bench and wood-turning tools. The bench work then consists of the making of several types of joints from various native woods; and is followed by the construction of two types of wooden trusses. The elementary turning exercises are followed by turning to templet between centers, and on the fact plate. For civil engineering students.

Prerequisite: Drawing 121.

Textbook: Blue prints and mimeograph notes.

6 hours a week (Laboratory); either semester; credit, 2 units.

Shop 221; *FORGE SHOP*.—The work in this shop comprises exercises on squaring and rounding stock; bending to circular and irregular forms; drawing out and upsetting; punching; twisting; and welding by forge fire. Joining of metals by soldering, brazing, and gas or acetylene welding is conducted in the Metallography Laboratory. Regular quizzes are given on assigned reading.

Textbook: *Forge-Practice*, by Bacon-Markham.

Prerequisite: Drawing 121.

3 hours a week (Laboratory); second semester; credit 1 unit.

Shop 223; *MACHINE SHOP*.—The bench work consists of chipping, filing, sawing, and scraping of a piece of cast iron to the required dimensions; also the assembly of machine parts being built in the shop. The lathe work covers the common machining operations; namely, plain and curved turning and facing to templet; taper turning and boring; external and internal threading; and eccentric turning. A hardened taper mandrel is ground between centers. The building of tool and machine equipment for the shop and laboratories provides additional practical work for the students. The students are quizzed on assigned reading each time they report to the shop.

Prerequisite: Shop 211.

Textbook: *Advanced Machine Work*, by Smith.

6 hours a week (Laboratory); second semester; credit 2 units.

MECHANICS

Mechanics 311; *TECHNICAL MECHANICS AND STRENGTH OF MATERIALS*.—The first half of the semester is devoted to Statics as treated in Maurer and Roark's *Technical Mechanics*. In this book the following topics are taken up: composition and resolution of forces, forces in equilibrium, simple structures with emphasis on the crane, friction, center of gravity. In the second half of the semester, Boyd's *Strength of Materials* is used and the following topics are taken up: relation between stress and strain, shear, stresses in riveted joints, torsion, and stresses in beams. For Mechanical Engineering and Electrical Engineering students.

Prerequisites: Mathematics 22 and Physics 33.

Textbooks: *Technical Mechanics*, by Maurer and Roark; and *Strength of Materials*, by Boyd.

5 hours a week (Class); first semester; credit 5 units.

Mechanics 312; *TECHNICAL MECHANICS*.—Force and force systems; composition and resolution of forces; forces in equilibrium; simple structures; friction; center of gravity, suspended cables, wires and chains; motion of a point and of a rigid body; relative motion; kinetics of a particle and of a body; work; power; energy; momentum and impulse. (For Civil Engineering students.)

Prerequisites: Mathematics 22 and Physics 33.

Textbook: *Technical Mechanics*, by Maurer and Roark.

5 hours a week (Class); first semester; credit 5 units.

Mechanics 321; *TECHNICAL MECHANICS AND STRENGTH OF MATERIALS*.—For the first half of the semester the rest of Boyd's *Strength of Materials* is taken up. The following topics are covered: deflection in beams, shear in beams, special beams, combined stresses, curve beams and hooks. The rest of the semester is devoted to Kinematics and Kinetics as treated by Maurer and Roark's *Technical Mechanics*. The following topics are taken up: motion of a point, motion of rigid body, kinetics of a particle, kinetics of a body, work, power, energy. For Mechanical Engineering and Electrical Engineering students.

Prerequisite: Mechanics 311.

Textbooks: *Technical Mechanics*, by Maurer and Roark; and *Strength of Materials*, by Boyd.

5 hours a week (Class); second semester; credit 5 units.

Mechanics 322; *STRENGTH OF MATERIALS*.—The course covers, the physical and mathematical ideas underlying the mechanics of materials and the design, investigation, and checking of bodies and elementary parts of a structure under loads. Moment of inertia of plane areas; stresses; riveted joints; torsion, stresses and deflections in beams; beams with more than two supports; special beams, columns and column formulas; combined stresses; resilience in bending and shear; theories of elastic limit and failure; curved beams and hooks. (For Civil Engineering students.)

Prerequisite: Mechanics 312.

Textbook: *Strength of Materials*, by Boyd; and *Carnegie Pocket Companion*.

5 hours a week (Class); second semester; credit 5 units.

DEPARTMENT OF CIVIL ENGINEERING

C. E. 211; *PLANE SURVEYING*.—This course consists of lectures, recitations, and field work, covering the use and the care of instruments, taking notes and making maps of surveys, profiles and cross-sections. Instruction is also given in methods of using logarithmic and other computation tables.

Prerequisite: Mathematics 11.

Textbook: *Elementary Surveying*, by Breed and Hosmer, Vol. I.

8 hours a week (2 Class, 6 Field); first semester; credit 4 units.

C. E. 221; *TOPOGRAPHIC SURVEYING*.—In this course the theory of stadia measurements, trigonometric and barometric leveling, hand levels and other types of instruments used in reconnaissance surveys are studied. Field work consist of making topographic surveys by plane table and stadia methods. Finished maps are made from each of the above surveys.

Prerequisite: C. E. 211, or S. S. 111.

Textbook: *Higher Surveying*, by Breed and Hosmer, Vol. II.

8 hours a week (2 Class, 6 Field); second semester; credit 4 units.

C. E. 311; *ADVANCED SURVEYING*.—Reconnaissance and preliminary surveying for highways and railroads. Curves; simple, compound, reverse and transition curves. Frogs and switches.

Prerequisite: C. E. 221.

Textbook: *Railroad Curves & Earthwork with Tables*, by Allen.

4 hours a week (1 Class, 3 Field); first semester; credit 2 units.

C. E. 312; *TESTING LABORATORY*.—Study and operation of testing machines. Tests of steel, iron, wood, and other building materials. Soil test. Must be accompanied or preceded by C. E. 314.

Prerequisite: Physics 33.

Textbook: None.

3 hours a week (Laboratory); first semester; credit 1 unit.

C. E. 313; *ROADS AND PAVEMENTS*.—Location, specifications, and construction of rural highways and city streets.

Prerequisite: C. E. 221.

Textbook: Construction of Roads and Pavements, by Agg.

2 hours a week (Class) first semester; credit 2 units.

C. E. 314; *MATERIALS OF CONSTRUCTION*.—Study of the engineering properties of timber, cast and wrought iron, steel, copper, tin, zinc, and their useful alloys; of cement; stone and sand; paints and varnishes.

Textbook: Materials of Construction, by Johnson.

2 hours a week (Class); first semester, credit 2 units.

C. E. 315; *ENGINEERING REPORTS*.—Each week a committee of three students prepares a carefully written report on a subject of engineering interest on which there may be a legitimate difference of opinion. The section sitting as a committee of the whole presided over by one of their number listens to the reading of the committee's report, discusses it, and finally accepts or rejects it. The object of the course is to familiarize the students with parliamentary law and to train them to address an audience in a clear and convincing manner on engineering matters.

Must be preceded or accompanied by Mechanics 312.

1 hour a week (Class); first semester; credit 1 unit.

C. E. 312; *ADVANCED SURVEYING*.—Earth work setting slope stakes, computation of earth work, and mass diagram. Measurement of flow in rivers. Soundings and setting ranges for dredging. Elements of geodesy. Elements of Practical Astronomy; latitude, longitude and determination of the true meridian.

Prerequisite: C. E. 311.

Textbooks: Railroad Curves and Earthwork with Tables, by Allen; and Higher Surveying, by Breed & Hosmer.

4 hours a week (1 Class, 3 Field); second semester; credit 2 units.

C. E. 322; *MODERN FRAMED STRUCTURES*.—Elements of the analysis of framed structure, analysis of roof trusses, analysis of bridge trusses for uniform loads, analysis of bridge trusses for concentrated loads, lateral trusses, portals, trestles, and towers.

Prerequisite: Mechanics 312.

Textbook: The theory and Practice of Modern Framed Structures. Part I, by Johnson, Bryan and Turneaure.

4 hours a week (Class); second semester; credit 4 units.

C. E. 323; *TESTING OF CEMENT AND CONCRETE*.—In this course the students are required to perform in the laboratory the different physical tests for cement prescribed by the American Society for Testing Materials. The laboratory work is supplemented by a study of other methods of testing Portland cement. Samples and tests of cement concrete

are also made with the object of learning the effect of various proportions of cement, of the character of the aggregates, of the consistency, etc. Inspection of a cement tile plant is arranged for during the semester.

Must be accompanied or preceded by C. E. 314.

Textbook: Materials of Construction, by Johnson.

3 hours a week (Laboratory); second semester; credit 1 unit.

C. E. 327; *ELEMENTARY SURVEYING*.—This course consists of recitations and field work to familiarize the students with transit and leveling work. Use of tables, computation, and plotting are also taught. A course for Mechanical Engineering and Electrical Engineering students.

Prerequisite: Mathematics 11.

Textbook: Elementary Surveying by Breed and Hosmer, Vol. I.

4 hours a week (1 Class, 3 Field); second semester, credit 2 units.

C. E. 328; *MECHINERY FOUNDATIONS*.—Foundations in general, and as applied to machinery. Spread footings and pile foundations. Properties of cement, concrete, and concrete aggregates. Fundamental principles of reinforcing concrete.

Reference textbook: Machinery Foundations and Erection, by Croft.

1 hour a week (Class); second semester; credit 1 unit.

C. E. 331; *SUMMER SURVEYING*.—The course is given for 8 weeks in the long summer vacation as described under general information.

8 weeks of field work; summer vacation; credit 8 units.

C. E. 411; *FINANCIAL ENGINEERING*.—A brief résumé of the principles of economics and their special application to the field of engineering. Also the study of sinking funds, depreciation, estimating, cost keeping, and the elements of accounting. Can only be taken by students who have completed or are taking at least 9 units of fourth year civil engineering subjects.

Textbook: Engineering Economics, by Fish; Twenty 20-Minute Lessons in Bookkeeping, by Beach.

3 hours a week (Class); first semester; credit 3 units.

C. E. 412; *HYDRAULICS*.—Theoretical hydrostatics and hydromechanics. Theory of hydraulic measurements by orifices, wiers, nozzles, short tubes, Venturi meters, current meters and floats. Study of flotation and stability of floating bodies; time to empty watertanks and time necessary to bring canal locks to the same level. Theory of the flow of water in pipes, conduits, open canals and rivers.

Prerequisite: Mechanics 312; and must be accompanied by C. E. 416.

Textbook: Hydraulics, Marriman.

4 hours a week (Class); first semester; credit 4 units.

C. E. 413; *STRUCTURAL DESIGN*.—Design of a steel roof truss, a riveted highway bridge, and pin-connected railroad bridge.

Prerequisite: Mechanics 322 and C. E. 322.

Textbook: The Theory and Practice of Modern Framed Structures, Part III, by Johnson, Bryan, and Turneaure.

9 hours a week (Computations and Drafting); first semester; credit 3 units.

C. E. 414; *REINFORCED CONCRETE CONSTRUCTION*.—Fundamental principles of concrete and steel in combination, rectangular beams, slabs, crossbeams and girders, columns, footings; bending and direct stress.

Materials, forms bending and placing of reinforcement. Mixing and placing of concrete, finishing surface, waterproofing. Estimating unit costs and quantities.

The theory is supplemented by tests of full-sized specimens of beams.

Prerequisite: Mechanics 322.

Textbook: Principles of Reinforced concrete Construction, by Turneaure & Maurer.

4 hours a week (Class) and 3 hours a week (Testing); first semester; credit 5 units.

C. E. 415; *WOODEN STRUCTURES*.—Uses of Philippine woods. Design of wooden beams, girders, posts, trusses, false-work, buildings and other timber structures in common use. Estimating costs.

Prerequisites: Mechanics 322 and C. P. 322.

Textbook: None.

6 hours a week (Computation and Drafting); first semester; credit 2 units.

C. E. 416; *HYDRAULIC LABORATORY*.—Experimental hydraulics involving the calibration of measuring tank; study of flow through orifices and short tubes; water measurements by weirs, Venturi meters, Pitot tubes and nozzles; friction losses in the flow thru pipes and study of the flow of water over model dams.

Prerequisites: Must be accompanied by C. E. 412.

3 hours a week (Laboratory); first semester; credit 1 unit.

C. E. 421; *CONTRACTS AND SPECIFICATIONS*.—The elements of the law of contracts, and engineering law. Engineering and legal aspects of specifications.

Prerequisites: C. E. 411, or M. E. 410, or their equivalents.

Textbook: Contracts, Specification and Engineering Relations, by Mead.

2 hours a week (Class); second semester; credit 2 units.

C. E. 422; *IRRIGATION ENGINEERING*.—Study of the use and practice of applying irrigation water and duty of water. Planning and construction of irrigation systems. Design of dams on porous foundations, canals, tunnels, flumes, pipes, spillways, drops, chutes, and headgates. Study of canal locations and theory of diversions.

Prerequisite: C. E. 412.

Textbook: Irrigation Practice and Engineering, by Etchevery, Vols. II & III.

5 hours a week (Class); second semester; credit 5 units.

C. E. 423; *APPLIED HYDRAULICS*.—This course consists of three parts as follows:

Water Supply.—Investigation of the sources of public water supplies, design and construction of works for the storage and distribution of water, including the hydraulic and structural problems of water works, but leaving the question of the quality and purification processes to be more fully considered in the course C. E. 427.

Sewerage.—The design and construction of work for the collection and disposal of sewage with reference to the hydraulic and structural problems involved. The sanitary aspects of the subject will be more fully considered in the course C. E. 427.

Water Power.—The investigation of water power sites, the study of dams, penstocks, turbines and waterwheels.

Prerequisite: C. E. 412.

Textbook: Public Water Supplies, by Turneure and Russel; Sewerage and Sewage Disposal, by Metcalf and Eddy; Treatise on Hydraulics, by Merriman.

3 hours a week (Class); second semester; credit 3 units.

C. E. 424; *MASONRY AND FOUNDATIONS.*—Stone and brick masonry. Retaining walls. Masonry bridges and culverts. Spread footings, pile foundations, subaqueous foundations. Each student is required to write and read to the class a report on a subject pertinent to the course.

Prerequisite: C. E. 414.

Textbook: Design of Masonry Structures and Foundations, by Williams.

2 hours a week (Class); second semester; credit 2 units.

C. E. 425; *REINFORCED CONCRETE DESIGN.*—Design of retaining walls; simple and continuous slabs; cross beams and girders; columns and footings; deck and girder bridge; piers and abutments; arch bridges; and simple irrigation structures.

Prerequisite: C. E. 414.

9 hours a week (Computation and Drafting); second semester; credit 3 units.

C. E. 426; *ENGINEERING PROBLEMS.*—A general review in the second semester of the fourth year, in which all members of the Civil Engineering instructional staff take turns in meeting the class. The object is to refresh the students' minds on past courses by discussing in class problems covering the most important principles involved in the various courses. By this means knowledge will be coordinated.

Prerequisite: The student must be a candidate for a degree at the end of the semester.

3 hours a week (Lecture); second semester; credit 1 unit.

C. E. 427; *SANITARY SCIENCE AND PUBLIC HEALTH.*—This course is designed to provide the student with such knowledge as well enable him to more fully and sympathetically cooperate in those public health problems in which the engineer is ordinarily associated with the public health officials. The course includes a brief résumé of the history of the various theories of disease, especially with the present theories of the cause and methods of prevention of communicable diseases. It covers sanitary surveys, water filtration and sterilization, and the sanitary aspect of plumbing and sewerage disposal. (The hydraulic and structural problems of water and sewer work are covered in the course C. E. 423, which should be taken simultaneously with this course.) There are also considered the cause for, and the manner of rat-proofing buildings; the lighting and ventilation of buildings; cemeteries; mosquito eradication for malarial control; the sanitary control of public bathing places; fly control; and the disposal of garbage and other wastes. The laws governing the enforcement of public health regulations are also briefly considered.

Must be preceded by Zoology 3, and either accompanied or preceded by C. E. 423.

Textbook: Municipal and Rural Sanitation, by Ehlers & Steel.

2 hours a week (Class); second semester; credit 2 units.

C. E. 428; *HYDRAULIC LABORATORY*.—Experimental hydraulics including calibration of measuring tank; study of water measurements by orifices; weirs; pitot tubes; Venturi meter and nozzles. Test of a Pelton wheel; hydraulic ram and centrifugal pumps. For Mechanical Engineering and Electrical Engineering students only.

Prerequisite: M. E. 413 or C. E. 412.

3 hours a week (Laboratory); second semester; credit 1 unit.

C. E. 4; *DESIGN OF ARCHES*.—An elective subject dealing with theory and design of reinforced concrete, elastic arch and Voussoir arches.

Prerequisite: C. E. 414.

6 hours a week (Computations and Drafting); may be given either semester; credit 2 units.

C. E. 5; *ADVANCED STRUCTURE*.—This course is offered as an elective to fourth year students of Civil Engineering. It covers the theory of trusses with redundant members, continuous trusses and girders, arches with and without hinges and suspension bridges.

Prerequisites: C. E. 413; C. E. 414 and C. E. 415.

4 hours a week (Class); second semester; credit 4 units.

DEPARTMENT OF MECHANICAL ENGINEERING

M. E. 211; *ENGINEERING KINEMATICS*.—Study of the various means of transmitting motion, graphical treatment of velocity transformation; determination of shape and size of parts of mechanisms such as linkwork, cams, tooth-gearing mechanisms, friction-gearing mechanisms, etc.

Prerequisites: Drawing 121 and Mathematics 12.

Textbook: Kinematics of Machines, by Guillet.

8 hours a week (2 Class, 6 Drafting); first semester; credit 4 units.

M. E. 223; *ELEMENTARY HEAT EQUIPMENT*.—Elementary study of gas and steam laws; steam calorimeters; fuels and combustion; boilers and their auxiliaries; steam engines, valves and valve gears; condensers; internal combustion engines.

Prerequisites: Physics 33 and Mathematics 21.

Textbooks: Heat Engines, by Allen & Bursley and Steam & Ammonia Tables, by Goodenough.

3 hours a week (Class); second semester; credit 3 units.

M. E. 315; *ELEMENTS OF INTERNAL COMBUSTION ENGINES*.—Elementary study of thermodynamics of gasoline, kerosene, and crude oil engines and auxiliaries—Otto cycle, Diesel, cycle, two-stroke cycle, four-stroke cycle, etc.

Prerequisites: Mathematics 21, and Physics 33.

Textbook: Heat Engines, by Allen and Bursley.

2 hours a week (Class); first semester; credit 2 units.

M. E. 316; *MECHANICAL LABORATORY*.—Calibration of gages, indicator springs, thermometers, planimeters and dynamometers; viscosity, density, flash point and coefficient of friction of lubricating oils; proximate analysis of coal and heating values of coal, gas and oil. Valve setting on steam engines and direct acting pump. Steam quality test;

study of efficiency and economy of steam engines, pumps, injectors and condenser.

Prerequisite: M. E. 223.

Textbook: *Experimental Engineering*, by Carpenter and Diederichs.
6 hours a week (Laboratory); first semester; credit 2 units.

M. E. 317; *THERMODYNAMICS*.—Properties of gases and vapors; available energy and entropy; changes of state of vapor media; flow of fluids; throttling processes.

Prerequisite: M. E. 223.

Textbooks: *Principles of Thermodynamics*, by Goodenough and Steam & Ammonia Tables, by Goodenough.

2 hours a week (Class); first semester; credit 2 units.

M. E. 318; *METALLOGRAPHY*.—Elementary treatment of manufacture of cast, malleable and wrought irons; Bessemer, open-hearth and crucible steels. Grain structure of steel, cast and malleable irons, brasses, etc, in normal state; and as affected by heat treatment, and hot and cold working.

Prerequisites: Chemistry 25 and Physics 33.

Textbooks: *Iron & Steel Manufacture*, by Macfarlane and *Metallography of Iron & Steel*, by Sauveur.

4 hours a week (1 Class, 3 Laboratory); first semester; credit 2 units.

M. E. 319; *MECHANICAL LABORATORY*.—Study and calibration of gages, indicator springs, thermometers, planimeters and dynamometers. Valve setting on steam on engines and direct acting pump. Experimental study of efficiency and economy of steam engine and turbine; adjustment, operation and economy test on gas and oil engines. Only for Electrical Engineering students.

Prerequisite: M. E. 223.

Textbook: *Experimental Engineering*, by Carpenter and Diederichs.

6 hours a week (Laboratory); first semester; credit 2 units.

M. E. 321; *MACHINE DESIGN*.—Nature of forces acting in machines. Nature of straining action in machine elements. Determination of the proportions of machine parts subjected to tension, compression and shear; bending and torsion; combined bending and tension, bending and torsion, torsion and compression.

Prerequisites: M. E. 211 and Mechanics 311.

Textbook: *Elements of Machine Design*, by Kimball and Barr.

7 hours a week (1 Class, 6 Drafting), second semester; credit 3 units.

M. E. 323; *FUELS AND LUBRICANTS*.—Nature of liquid and gaseous fuels obtained from solid fuels and crude petroleum. Efficient combustion of solid, liquid and gaseous fuels under boilers and in engines; including alcohol. Nature of mineral and vegetable lubricants, and their proper application to engines and machinery.

Prerequisite: M. E. 223.

Textbook: *Marks' Handbook and Principles of Thermodynamics*, by Goodenough.

2 hours a week (Class); second semester; credit 2 units.

M. E. 325; *ELEMENTS OF STEAM ENGINES.*—Elementary study of thermodynamics of vapors and the applications thereof to steam engines, feed-pumps, steam turbines, refrigerating machines, condensers, and boilers. Nomenclature of boilers, boiler accessories and auxiliaries and other heat equipments. Kinematics of steam engine mechanisms.

This course is designed for third year Civil Engineering student; students in other departments may not be allowed to take this course.

Prerequisite: M. E. 315.

Textbook: Heat power by Norris and Therkelsen.

2 hours a week (Class); second semester; credit 2 units.

M. E. 326. *SHORT MECHANICAL LABORATORY.*—Determination of events in and operation of:—four-cycle oil engines; two-cycle oil engines; auto engines. Setting the valves of: Duplex pump; slidevalve engines; corliss engines. Tests of:—internal combustion engines; steam engines; boilers.

This course is designed for third year Civil Engineering students; students in other departments may not be allowed to take this course.

3 hours a week (Laboratory); second semester; credit 1 unit.

M. E. 410; *FINANCIAL ENGINEERING.*—This is a fundamental treatment of economic principles as applied to engineering, and embraces the following subject matter: business units; interest; analysis of investment problems; analysis of first cost and operation cost; business statistics; estimating; valuation; engineering reports. Some elementary bookkeeping is given concurrently with this.

Prerequisite: Open to students who have completed or are taking at least 9 units of fourth year subjects.

Textbooks: Engineering Economics, by Fish and Twenty 20-Minute Lessons in Bookkeeping, by Beach.

2 hours a week (Class); first semester; credit 2 units.

M. E. 411; *MACHINE DESIGN.*—Theory of long columns; eccentric loading on long columns; stresses due to suddenly applied load, impact and shock; selection of mechanism to accomplish a definite purpose. Examination of machine to determine the nature and distribution of the forces acting on and the resulting stresses and strain in each element due to kinetic and structural conditions. Determination of the proportion of machine parts based on the forces acting upon them, and practical considerations. Grouping of machine elements into machine for functional operation.

Prerequisites: M. E. 321 and Mechanics 321.

Textbooks: Elements of Machine Design, by Kimball and Barr; and Drawing Room Problems, by Albert.

8 hours a week (2 Class, 6 Drafting); first semester; credit 4 units.

M. E. 413; *HYDRAULICS.*—Hydrostatics and hydrokinetics; flow in pipes and open channels; hydrodynamics; study of water measuring devices.

Prerequisite: Mechanics 321.

Textbook: Hydraulics, by Daugherty.

3 hours a week (Class); first semester; credit 3 units.

M. E. 416; STEAM ENGINES AND TURBINES.—The engine cycle; multiple expansion and uniflow engines. Steam turbine types and blade design; mechanical losses; governing; types of turbines.

Prerequisite: M. E. 317.

Textbooks: Principles of Thermodynamics, by Goodenough; Steam Turbines, by Moyer; and Steam & Ammonia Tables, by Goodenough.

2 hours a week (Class); first semester; credit 2 units.

M. E. 417; REFRIGERATION.—Physical properties of refrigerating fluids; study of various methods of abstracting heat; structural features of refrigerating machines; heat insulation; cold storage; manufacture of ice.

Prerequisite: M. E. 317.

Textbooks: Elements of Refrigeration, by Greene; Steam & Ammonia Tables, by Goodenough; and Principles of Thermodynamics, by Goodenough and Marks' Handbook.

2 hours a week (Class); first semester; credit 2 units.

M. E. 418; DYNAMICS OF GAS ENGINE AND AUXILIARIES.—Study of fans, multibladed and positive blowers, multi-stage air compressors. Elementary treatment of crank efforts and flywheels; balancing; governors; and valves and valve gearing.

Prerequisites: M. E. 317 and M. E. 323.

Textbooks: Marks' Handbook; Principles of Thermodynamics, by Goodenough; Valves and Valve Gears, by Furman; and Motor Vehicles, by Fraser & Jones.

3 hours a week (Class); first semester; credit 3 units.

M. E. 419; INDUSTRIAL ORGANIZATION.—Industrial relations preceding the industrial revolution; the industrial revolution and its immediate effects; modern industrial tendencies; types of organization; administrative charts; the committee system.

Prerequisite: The same as for M. E. 410.

Textbook: Principles of Industrial Organization, by Kimball.

2 hours a week (Class); first semester; credit 2 units.

M. E. 421; MECHANICAL LABORATORY.—Determination of the thermal efficiency and losses of heat motors; test of steam boiler, steam turbine, air compressor, centrifugal fan and ice machine adjustment, operation and variation of gas and oil engines economy with load.

Prerequisites: M. E. 316, 416, 417, 418 and accompanied or preceded by M. E. 422.

Textbook; Experimental Engineering, by Carpenter and Diederichs.

6 hours a week (Laboratory); first semester; credit 2 units.

M. E. 422; GAS AND OIL ENGINES.—Combustion of fuels in engine cylinders; Otto and Diesel cycles; carburation; governing; lubrication; low-compression, air and solid injection Diesel engines; limitations of each type of engine.

Prerequisites: M. E. 317 for all students; and M. E. 323 and M. E. 418 for Mechanical Engineering students.

Textbooks: Motor Vehicles, by Fraser & Jones; and Oil Engines, by Morrison.

3 hours a week (Class); second semester; credit 3 units.

M. E. 425; INSPECTION TRIPS.—Students are required to visit power stations, machine shops, manufacturing plants, etc., and to make reports

upon assigned subjects such as general arrangement of plant, handling of fuel and materials, distribution of power, etc.

3 hours a week (Inspection); second semester; credit 1 unit.

M. E. 426; *SEMINAR*.—Students are required to present papers on assigned subjects from engineering reference works and magazines. These papers are then discussed.

Prerequisite: Open only to graduating seniors.

Textbook: None required.

3 hours a week (Class); second semester; credit 1 unit.

M. E. 427; *HYDRAULIC MACHINERY*.—Study of hydraulic machinery with special reference to impulse wheels, reaction turbines, centrifugal pumps, rotary pumps, and high pressure reciprocating pumps.

Prerequisite: M. E. 413.

Textbooks: Hydraulic, by Daugherty; Centrifugal Pump, by Daugherty; and Marks' Handbook.

2 hours a week (Class); second semester; credit 2 units.

M. E. 428; *STEAM POWER PLANT EQUIPMENT*.—An advanced treatment, supplementing M. E. 223 and applying M. E. 323, to such power house units as stokers, air preheaters, boilers, condensers, feed-water heaters, evaporators, etc. A rigorous treatment of heat transfer will be applied.

Prerequisites: M. E. 317 and 323.

Textbook: Marks' Handbook.

2 hours a week (Class); second semester; credit 2 units.

M. E. 439; *INDUSTRIAL ADMINISTRATION*.—Planning department; purchasing and storing of materials, standardization and inspection; location and layout of industrial plants; employment problems; compensation of labor; welfare work. The drafting room work consists in the development of an organization for some specific purpose.

Prerequisite: M. E. 419.

4 hours a week (1 Class, 3 Drafting); second semester; credit 2 units.

DEPARTMENT OF ELECTRICAL ENGINEERING

E. E. 211; *INTRODUCTORY ELECTRICAL ENGINEERING*.—A short introductory course covering the elementary concepts of Electrical Engineering, the laws of magnetic and electric circuits, direct current instruments, motors and generators, offered to students who have not had college physics nor calculus. Required of second-year students in both Mechanical and Electrical Engineering.

Prerequisites: Mathematics 12 and Physics A.

Textbook: Industrial Electricity, Part I, by Chester L. Dawes.

2 hours a week (Class); first semester; credit 2 units.

E. E. 221; *INTRODUCTORY ELECTRICAL ENGINEERING*.—A short introductory course covering simple alternating current circuits involving resistance, inductance and capacity; and alternating current machinery. Continuation of course E. E. 211.

Textbook: Industrial Electricity, Part II, by Chester L. Dawes.

2 hours a week (Class); second semester; credit 2 units.

E. E. 312; *DIRECT CURRENT LABORATORY*.—Study of simple electric circuits and switches, protective devices, and electrical instruments. Measurements of electrical resistances, currents and potentials. Simple tests and study of the operating characteristics of direct current generators and motors, their efficiency and regulation.

Must be preceded or accompanied by E. E. 314.

Reference: Experimental Electrical Engineering and Manual for Electrical Testing, Vol. 1, by Vladimir Karapetoff.

6 hours a week (Laboratory); first semester; credit 2 units.

E. E. 314; *DIRECT CURRENT THEORY*.—The study of the fundamental, physical and mathematical relations in electric and magnetic circuits and their application to direct current motors and generators. The study of the characteristics and practical applications of D. C. machinery, storage batteries, measuring instruments, and distribution systems. Required of third-year students in both Mechanical and Electrical Engineering.

Prerequisites: Mathematics 22, Physics 34 and E. E. 221.

Textbook: Principles of Direct Current Machines, by Alexander S. Langsdorf.

5 hours a week (2 class, 3 Supervised Problem Work); first semester; credit 3 units.

E. E. 315; *ENGINEERING MATHEMATICS*.—A review of the courses in mathematics with emphasis on the general methods of solving engineering problems in mathematical forms; analytical and graphical. The construction of graphical charts. The theory and use of complex quantities. Required of third-year students in Electrical Engineering.

Prerequisites: Mathematics 22, Physics 34 and E. E. 221.

Textbook: Engineering Mathematics, by Charles P. Steinmetz.

2 hours a week (Class); first semester; credit 2 units.

E. E. 317; *ELEMENTARY ELECTRICAL ENGINEERING*.—General course in Electrical Engineering covering the fundamental laws of magnetic and electric circuits, direct current generators and motors, storage batteries, direct current control devices. Adapted to the needs of Civil Engineering students, required and offered to them only.

Prerequisites: Mathematics 22 and Physics 34.

Textbook: Principles and Practice of Electrical Engineering, by Alexander Gray.

2 hours a week (Class); first semester; credit 2 units.

E. E. 318; *SHORT D. C. LABORATORY*.—A short course in electrical laboratory covering measurement of resistance, study of electric circuits, and characteristics of direct current generators and motors. Required of third-year students in Civil Engineering, and offered to them only. This course is not equivalent to E. E. 312.

Must be either accompanied or preceded by E. E. 317.

3 hours a week (Laboratory); first semester; credit 1 unit.

E. E. 322; *ALTERNATING CURRENT LABORATORY*.—Study of alternating current instruments and meters and electric circuits having various arrangements of inductance and capacity. Measurements of power and study of polyphase relations. Simple tests and study of the general

characteristics of alternating current generators, synchronous motors, induction motors, transformers, etc.

Prerequisite: E. E. 312. Must be either accompanied or preceded by E. E. 324.

Reference: Experimental Electrical Engineering and Manual for Electrical Testing, Vol. II. by Vladimir Karapetoff.

6 hours a week (Laboratory); second semester; credit 2 units.

E. E. 324: *ALTERNATING CURRENT THEORY*.—The study of the fundamental relations in alternating currents, including single and poly-phase circuits having various arrangements of resistance, inductance and capacity. Representation of alternating currents by vectors and complex quantities. The study of the theory, characteristics, and practical applications of the alternating current generators, motors, transformers, measuring instruments, and simple transmission and distribution systems. Required of third-year students in both Mechanical and Electrical Engineering.

Prerequisite: E. E. 314.

Textbooks: Principles of Alternating Currents and Principles of Alternating Current Machinery, by Ralph R. Lawrence.

5 hours a week (2 Class, 3 Supervised Problem Work); second semester; credit 3 units.

E. E. 325; *ELECTRICAL DRAFTING*.—A course in drawing exercises specially adapted to the needs of electrical engineering students; projections, wiring diagram conventions, controlling devices, motors, generators, transformers, switchboards, distribution systems, etc. Required of third-year students in Electrical Engineering.

Prerequisite: E. E. 314. Must be either accompanied or preceded by E. E. 324.

7 hours a week (1 Class, 6 Drafting); second semester; credit 3 units.

E. E. 327; *ELEMENTARY ELECTRICAL ENGINEERING*.—A continuation course of E. E. 317, covering the study of alternating current, alternating current generators and motors, transformers, distribution and transmission of electricity, illumination and wiring of buildings.

Textbook: Principles and Practice of Electrical Engineering, by Alexander Gray.

2 hours a week (Class); second semester; credit 2 units.

E. E. 328; *SHORT A. C. LABORATORY*.—A continuation of E. E. 318, covering alternating current circuits, meters, generators and motors, and transformers. Required of third-year students in Civil Engineering, and offered to them only. Not equivalent to E. E. 322.

Prerequisite: E. E. 318. Must be either accompanied or preceded by E. E. 327.

3 hours a week (Laboratory); second semester; credit 1 unit.

E. E. 412; *ADVANCED ELECTRICAL LABORATORY*.—An advanced course in electrical testing covering special and commercial tests on direct and alternating current generators, direct current motors, synchronous motors, induction motors, rotary converters, transformers, phase advancers, etc. The predetermination of their characteristics. Rectifiers and battery testing.

Prerequisite: E. E. 322. Must be either accompanied or preceded by E. E. 414.

Textbooks: Experimental Electrical Engineering and Manual for Electrical Testing, Vols. I & II, by Vladimir Karapetoff.

6 hours a week (Laboratory); first semester; credit 2 units.

E. E. 413; *ELECTRICAL EQUIPMENT*.—A course covering the selection and arrangement of electrical equipment for an industrial plant, such as a machine shop, cement plant, pumping plant, etc. It includes the choice of systems, the study of electric motor drive, selection of motors, transformers, controllers, protective devices and other apparatus, and the general illumination of the plants.

Prerequisites: E. E. 314 and E. E. 324.

Textbook: Electrical Equipment, by Harold W. Brown.

8 hours a week (2 Class, 6 Drafting); first semester; credit 4 units.

E. E. 414; *ADVANCED ELECTRICAL ENGINEERING*.—The study of complicated electric, magnetic, and dielectric circuits, and non-sinoidal waves. A more thorough and advanced treatment of the laws of electric and magnetic circuit and of the theory of the transformers, generators, motors of different kinds, synchronous converters, balancers, etc. The use of complex quantities and various diagrams in the solution of problems and predetermination of characteristics. Required of fourth-year students in Electrical Engineering.

Prerequisites: E. E. 315 and E. E. 324.

Textbooks: Principles of Alternating Currents and Principles of Alternating Current Machinery, by Ralph R. Lawrence.

5 hours a week (2 Class, 3 Supervised Problem Work); first semester; credit 3 units.

E. E. 415; *ELECTRICAL COMMUNICATION ENGINEERING*.—The course deals with the consideration of problems, apparatus, and measurements pertaining to telegraphy, telephony, and radio communication. Required of fourth-year students in Electrical Engineering.

Prerequisites: E. E. 322 and E. E. 324.

6 hours a week (3 Class, 3 Laboratory); first semester; credit 4 units.

E. E. 422; *ADVANCED ELECTRICAL LABORATORY*.—A continuation of the course E. E. 412.

Textbooks: Experimental Electrical Engineering and Manual for Electrical Testing, Vols. I & II, by Vladimir Karapetoff.

6 hours a week (Laboratory); second semester; credit 2 units.

E. E. 423; *ELECTRICAL POWER PLANT DESIGN*.—A course covering the complete design of a generating station for a chosen city or group of towns, the selection of prime-movers, generators, auxiliary apparatus, and the estimate of costs. It also includes the selection and arrangement of transmission and distribution line equipment and materials, and the choice of substation. Required of fourth-year students in Electrical Engineering.

Prerequisite: E. E. 413. Must be either accompanied or preceded by E. E. 424.

Textbooks: Electric Power Plant Engineering, by J. Weingreen and Electric Power Equipment, by J. G. Tarboux.

11 hours a week (2 Class, 9 Computations); second semester; credit 5 units.

E. E. 424; *ELECTRICAL TRANSMISSION AND DISTRIBUTION*.—The fundamentals of transmission and distribution of electrical power, calculation of line constants, short line solutions, characteristics of transmission and distribution lines, graphical solutions of line problems, circle diagrams. Required of fourth-year students in Electrical Engineering.

Prerequisites: E. E. 413 and E. E. 414.

2 hours a week (Class); second semester; credit 2 units.

E. E. 425; *ELECTRICAL ENGINEERING SEMINAR*.—A group course in which the students are required to make a careful and thorough study and present papers on assigned subjects on the different phases and applications of Electrical Engineering. The papers are then discussed by the whole class. Required of fourth-year students in Electrical Engineering.

Prerequisite: Open only to students taking all their remaining subjects in the fourth year.

1 to 3 hours a week; second semester; credit 1 unit.

E. E. 428; *APPLIED ELECTRICAL ENGINEERING*.—The course covers the electrical ignition of internal combustion engines, starting and lighting equipments of automobiles, the selection of electrical equipment for industrial plants. Similar, but not equivalent to the course E. E. 413. Offered primarily for and required of fourth-year students in Mechanical Engineering.

Prerequisites: E. E. 322 and E. E. 324.

Textbooks: Motor Vehicles and Their Engines, by Fraser & Jones, and Electrical Equipment, by Harold W. Brown.

2 hours a week (Class); second semester; credit 2 units.

FOUR-YEAR CURRICULUM FOR CIVIL ENGINEERING

Leading to the Degree of B.S. in C.E.

FIRST YEAR

First Semester

	Class	Lab	Units
Mathematics 11 . . .	5	0	5
English 1	3	0	3
Social Sc. 1) . . .			
or } ^a . . .	3	0	3
Spanish 10) . . .			
Drawing 111	0	6	2
Chemistry 25	3	6	5
Eng'g Lectures . . .	1	0	0
Totals	15	12	18

Second Semester

	Class	Lab	Units
Mathematics 12	5	0	5
English 1	3	0	3
Social Sc. 2)			
or } ^a	3	0	3
Spanish 11)			
Drawing 121	0	6	2
Chemistry 25	3	6	5
Totals	14	12	18

^a Students may select two semesters of either Social Science or Spanish.

SECOND YEAR

Mathematics 21	5	0	5
Physics 33	3	6	5
C. E. 211	2	6	4
English 7 ^b	2	0	2
Shop 212 ^b	0	6	2
Totals	12	18	18

Mathematics 22	5	0	5
Physics 34	3	6	5
C. E. 221	2	6	4
Geology 103 ^b	1	6	3
Zoology 3 ^b	1	0	1
Totals	12	18	18

^b May be taken in either semester.

THIRD YEAR

Mech. 312	5	0	5
C. E. 311	1	3	2
C. E. 312	0	3	1
C. E. 313	2	0	2
C. E. 314	2	0	2
C. E. 315	1	0	1
M. E. 315	2	0	2
E. E. 317	2	0	2
E. E. 318	0	3	1
Totals	15	9	18

Mech. 322	5	0	5
C. E. 321	1	3	2
C. E. 322	4	0	4
C. E. 323	0	3	1
M. E. 325	2	0	2
M. E. 326	0	3	1
E. E. 327	2	0	2
E. E. 328	0	3	1
Totals	14	12	18

FOURTH YEAR

C. E. 411	3	0	3
C. E. 412	4	0	4
C. E. 413	0	9	3
C. E. 414	4	3	5
C. E. 415	0	6	2
C. E. 416	0	3	1
Totals	11	21	18

C. E. 421	2	0	2
C. E. 422	5	0	5
C. E. 423	3	0	3
C. E. 424	2	0	2
C. E. 425	0	9	3
C. E. 426	0	3	1
C. E. 427	2	0	2
Totals	14	12	18

FOUR-YEAR CURRICULUM FOR MECHANICAL ENGINEERING

Leading to the Degree of B.S. in M.E.

FIRST YEAR

(Same as Civil Engineering)

SECOND YEAR

<i>First Semester</i>				<i>Second Semester</i>			
	Class	Lab	Units		Class	Lab	Units
Mathematics 21	5	0	5	Mathematics 22	5	0	5
Physics 33	3	6	5	Physics 34	3	6	5
M. E. 211	2	6	4	M. E. 223	3	0	3
E. E. 211	2	0	2	E. E. 221	2	0	2
Shop 211	0	6	2	Shop 221 (Forge)	0	3	1
				Shop 223 (Machine)	0	6	2
Totals	12	18	18	Totals	13	15	18

THIRD YEAR

Mech. 311	5	0	5	Mech. 331	5	0	5
English 7	2	0	2	M. E. 321	1	6	3
M. E. 316	0	6	2	M. E. 323	2	0	2
M. E. 317	2	0	2	C. E. 327	1	3	2
M. E. 318	1	3	2	C. E. 328	1	0	1
E. E. 312	0	6	2	E. E. 322	0	6	2
E. E. 314	2	3	3	E. E. 324	2	3	3
Totals	12	18	18	Totals	12	18	18

FOURTH YEAR

M. E. 410	2	0	2	C. E. 421	2	0	2
M. E. 411	2	6	4	C. E. 428	0	3	1
M. E. 413	3	0	3	E. E. 428	2	0	2
M. E. 416	2	0	2	M. E. 421	0	6	2
M. E. 417	2	0	2	M. E. 422	3	0	3
M. E. 418	3	0	3	M. E. 425	0	3	1
M. E. 419	2	0	2	M. E. 426	0	3	1
				M. E. 427	2	0	2
				M. E. 428	2	0	2
				M. E. 429	1	3	2
Totals	16	6	18	Totals	12	18	18

FOUR-YEAR CURRICULUM FOR ELECTRICAL ENGINEERING

Leading to the Degree of B.S. in E.E.

FIRST YEAR

(Same as Civil Engineering)

SECOND YEAR

<i>First Semester</i>				<i>Second Semester</i>			
	Class	Lab	Units		Class	Lab	Units
Mathematics 21	5	0	5	Mathematics 22	5	0	5
Physics 33	3	6	5	Physics. 34	3	6	5
M. E. 211	2	6	4	M. E. 223	3	0	3
E. E. 211	2	0	2	E. E. 221	2	0	2
Shop 211.	0	6	2	Shop 221 (Forge).	0	3	1
				Shop 223 (Machine)	0	6	2
Totals	12	18	18	Totals	13	15	18

THIRD YEAR

Mech. 311	5	0	5	Mech. 321	5	0	5
English 7	2	0	2	C. E. 327	1	3	2
M. E. 317	2	0	2	C. E. 328	1	0	1
M. E. 319	0	6	2	M. E. 323	2	0	2
E. E. 312	0	6	2	E. E. 322	0	6	2
E. E. 314	2	3	3	E. E. 324	2	3	3
E. E. 315	2	0	2	E. E. 325	1	6	3
Totals	13	15	18	Totals	12	18	18

FOURTH YEAR

M. E. 410	2	0	2	C. E. 421	2	0	2
M. E. 413	3	0	3	C. E. 428	0	3	1
E. E. 412	0	6	2	M. E. 422	3	0	3
E. E. 413	2	6	4	M. E. 427	2	0	2
E. E. 414	2	3	3	E. E. 422	0	6	2
E. E. 415	3	3	4	E. E. 423	2	9	5
				E. E. 424	2	0	2
				E. E. 425	0	3	1
Totals	12	18	18	Totals	11	21	18

FACULTY OF INSTRUCTION

SCHOOL OF SURVEYING

NUMERIANO MONTES, Surveyor,
Surveyor-Instructor, Instructor in Charge—School of Surveying.

MAXIMO LACHICA, Surveyor,
Surveyor-Instructor, Instructor in Surveying.

DEMETRIO ANDRES, Surveyor,
Special Lecturer on Mining Surveying and Laws.

NUMERIANO CARREON, B.S.E., LL.B.,
Special Lecturer on Public Land Laws.

ROQUE EBRON, LL.B.,
Special Lecturer on Elementary Procedure.

CLODUALDO GARCIA, A.B., LL.B.,
Special Lecturer on Law of Property.

JUAN GRIÑO, LL.B.,
Special Lecturer on Land Registration.

MARCOS PEÑALOZA, Chief Accountant, Bureau of Lands,
Special Lecturer on Survey Accounting.

Note:—See also the Faculty of the College of Engineering.

SCHOOL OF SURVEYING

HISTORY AND GENERAL INFORMATION

At the beginning of the academic year 1925-26 the School of Surveying of the Bureau of Lands was transferred to the University and became the School of Surveying of the College of Engineering. While primarily founded to train pensionados for service of the Bureau of Lands, it is nevertheless, like all schools and colleges of the University open to all persons, who have the necessary qualifications to enter. The entrance requirements are the same as for the College of Liberal Arts, and the qualifications for admission and the entrance tests to the College of Liberal Arts are applicable to the School of Surveying.

The miscellaneous fees and expenses and the general regulations prescribed for the College of Engineering are also applicable to the School of Surveying.

INFORMATION CONCERNING PENSIONADOSHIPS

Status of Pensionados of the Bureau of Lands.—Pensionados of the Bureau of Lands are appointed by and are subject to the immediate orders of the Director of the Bureau of Lands, except in matters relating to their studies in the School of Surveying. In all such matters they are subject to the control of the University officials like all other students.

Qualifications for Appointment as Pensionado.—Applicants for pensionadoships must not be less than 17 years of age; must pass a medical examination showing that they are in good health, physically strong, with good eyesight and good hearing, and must have completed the high-school course in a duly accredited school or college, or its equivalent, and qualify for entrance into the School of Surveying in the entrance tests given by the University.

Procedure for Applying for Pensionadoship.—A student interested in this course and who desires to enjoy the scholarship benefits herein announced must make a formal application to the Director of Lands. Only applicants who have taken the prescribed entrance examinations of the University of the Philippines will be considered. Applications for pensionadoships in surveying must therefore be accompanied by a duly sworn affidavit certifying that the applicant has taken the entrance examinations given by the University, stating the place and time of examination and a certificate of all the ratings obtained by the applicant while pursuing the secondary course. Only applicants who have qualified in these entrance examinations, duly certified by the University authorities, will be selected for appointment as pensionados.

Perquisites and Obligations of a Pensionado of the Bureau of Lands.—Pensionados are allowed a monthly pension of ₱25 during the period of their pensionadoship. They also receive free tuition in the college of Engineering. They must, however, pay for their books, instruments and military uniforms and all other fees prescribed for all students of the College of Engineering. Applicants granted a pension must pay their own traveling expenses from their residences to Manila. They must make satisfactory progress in their study or they will be dropped from the College

of Engineering. A pensionado, who for any cause shall leave the School of Surveying without prior approval of the Director of Lands, will be debarred from appointment to any position in the Philippine Civil Service and from matriculation in any public school or duly accredited private school during the same school year. At about the time of the graduation, they will be permitted to take the Junior Surveyor's examination given by the Philippine Civil Service, and those who pass will enter the service of the Bureau of Lands, at a salary of ₱600 a year. They will be required to sign a contract binding themselves to serve the Bureau for four years after graduation from the School of Surveying.

Assignment to Duty; Privileges and Prospects of Advancement.—Junior surveyors are assigned to field duty and are allowed traveling expenses and per diems. Those who are faithful and efficient and have acquired sufficient training and experience as junior surveyors are appointed assistant surveyors at a salary of ₱1,200 per annum, with traveling expenses and per diems, as soon as they qualify in the Civil Service examination for assistant surveyors. On account of the expansion of the activities of the Bureau of Lands resulting from the inauguration of cadastral projects and the reorganization of its field service, there is quite a demand for the services of competent surveyors to fill responsible positions. Vacancies in the service also occur from time to time, so that there is good prospect for advancement for those who are really deserving.

THE TITLE OF ASSOCIATE IN SURVEYING

Upon satisfactorily completing all the work prescribed for the regular two-year course in the School of Surveying, the student will be granted the title of Associate in Surveying. This title is analogous to that of Associate in Arts, the two years work in the School of Surveying being considered equivalent to the course in a Junior College.

DEGREE OF SURVEYOR

1. Candidates for the above degree must have, at the time of graduation at least three years of practical experience after receiving the title of Associate in Surveying; said experience to be in actual work related to Surveying, either in the Bureau of Lands, or in an equivalent first-class Surveying Organization, and to be approved by a committee composed of the Dean of the College of Engineering, U. P.; the Director of the Bureau of Lands; and the Chief Surveyor of the Bureau of Lands.

2. Candidates must present a thesis on some original work on Surveying acceptable to the above Committee. The title and outline of the thesis must be submitted and approved by the Committee at least one year before the date of graduation.

3. Candidates must pass an oral examination on the subject matter of the thesis, said examination to be conducted and judged by the Committee, but open to other interested members of the faculty.

4. The recommendation of the above Committee on the qualifications, practical experience, thesis and examination must be unanimous.

5. The degree shall be conferred upon the recommendation of the Committee and approved by the Faculty of the College of Engineering, the University Council, and the Board of Regents.

TWO-YEAR CURRICULUM FOR THE SCHOOL OF SURVEYING

Leading to the title of Associate in Surveying

FIRST YEAR

<i>First Semester</i>				<i>Second Semester</i>			
	Class	Lab	Units		Class	Lab	Units
Math. 13	5	0	5	Math. 14	5	0	5
*English 1	3	0	3	*English 1	3	0	3
*Spanish. 10	3	0	3	*Spanish 11	3	0	3
*S. S. 111	2	6	4	*C. E. 221	2	6	4
Drawing 112	0	6	2	Public Land Laws . . .	2	0	2
*Eng. Lectures	1	0	0	Surv. Accounting . . .	1	0	1
<hr/>				<hr/>			
Totals	14	12	17	Totals	16	6	18

SECOND YEAR

<i>First Semester</i>				<i>Second Semester</i>			
*C. E. 311	1	3	2	*C. E. 321	1	3	2
S. S. 216	1	3	2	S. S. 217	0	3	1
Spanish 12	3	0	3	Spanish 13	3	0	3
Elementary Procedure .	2	0	2	*English 7	2	0	2
Law of Property . . .	2	0	2	Geol. 13	3	0	3
S. S. 218	2	0	2	Land Registration . . .	2	0	2
Land Mapping.	0	3	1	S. S. 227	2	9	5
S. S. 219	1	9	4				
<hr/>				<hr/>			
Totals	12	18	18	Totals	13	15	18

* These units are regular work of the College of Engineering, and will be counted on the records of students wishing to take a course in Civil Engineering after completing the course in the Surveying School. Mathematics 13 plus Mathematics 14 may be offered as a substitute for Mathematics 11 in the regular Engineering course.

LAND SURVEYING PRACTICE 231.—Summer vacations, 8 units.

The students of the Surveying School must complete four semesters' work in the Department of Physical Education and two semesters' work in the Department of Military Science.

COURSES OF INSTRUCTION

MATHEMATICS

Mathematics 13; *TRIGONOMETRY*.—This course for students of surveying is practically part of S. S. 111 and is synchronized with it. It begins with an intensive study of logarithms and elements of plane trigonometry, as only the simplest elements of surveying can be undertaken until the student is grounded in these mathematical subjects. Afterwards more advanced work in plane trigonometry is given and also solid geometry.

5 hours a week (Class); first semester; credit 5 units.

Mathematics 14; *ALGEBRA AND TRIGONOMETRY*.—Spherical Trigonometry, Graphs, Quadratics, Progressions, Inequalities, Complex Numbers, Binomial Theorem, Determinants Theory of Equations.

Prerequisite: Mathematics 13.

5 hours a week (Class); second semester; credit 5 units.

ENGLISH

English 1; *FRESHMAN COMPOSITION*.—This course deals with the fundamentals of correct English expression, and is designed to aid the student in forming correct language habits. Study of the principles of English composition, the writing and revision of original themes, and collateral reading form the content of the course, which is prerequisite to all other courses in English.

3 hours a week (Class); both semesters; credit 6 units.

English 7; *ENGLISH FOR ENGINEERS*.—This course is limited to students in the various fields of engineering.

The purpose of the course is to supply specialized instruction in the peculiar kind of expository writing which pertains to the general field of engineering. Practice in the writing of reports as well as of other special forms of exposition, constitute the method by which this purpose is realized.

Prerequisite: English 1.

2 hours a week (Class); either semester; credit 2 units.

SPANISH

Spanish 10; *ELEMENTARY SPANISH*.

Spanish 11; *ELEMENTARY SPANISH*.—A study of the elements of the Spanish language, with reading and exercises in conversation and composition.

Textbook: Moreno-Lacalle's Elementos de Español.

The two courses of one semester each, constitutes a year course, with credit of 6 units divisible into two semestral courses of 3 units each.

Prerequisite for Spanish 11; Spanish 10.

3 hours a week (Class); each semester; credit 3 units.

Spanish 12; *INTERMEDIATE SPANISH*.

Spanish 13; *INTERMEDIATE SPANISH*.—Spanish grammar; reading, conversation and composition.

Courses as in Elementary Spanish.

Prerequisites: Spanish 10 and 11, or its equivalent. For Spanish 13; Spanish 12.

Textbook: F. T. D.'s *Gramatica Española* (tercer grado), según los principios de la Real Academia; Alvarez-Quintero's *La Flor de la Vida*, and Morley's *Spanish Humor in Story and Essay*.

3 hours a week (Class); each semester; credit 3 units.

LAW

PUBLIC LAND LAWS.—This subject covers classifications of lands of the public domain, kinds of concessions of public lands, qualifications of applicants requirements for perfection of rights, procedure and legal restrictions. The history of the evolution of the present public land laws is traced. In addition to the rules and regulations promulgated under the Public Land Act, the circulars and orders of the Secretary of Agriculture and Natural Resources and the Director of Lands, opinions of the Attorney-General and decisions of the Supreme Court, construing and applying provisions of the Public Land Law are studied.

2 hours a week (Class); second semester; credit 2 units.

ELEMENTARY PROCEDURE.—This course treats of ordinary pleadings; of the fundamental rules that must be observed in the hearing by public inspectors; of administrative land cases; of how issues in such cases are joined; of presumption; and of the mode in manners of ascertaining the facts in dispute therein.

Prerequisite: Public Land Laws.

2 hours a week (Class); first semester; credit 2 units.

LAW OF PROPERTY.—It includes both Real and Personal Property, laying greater emphasis on the principles of law governing the former. The subject embraces a study of Book II; Book III, Titles I and II; Book IV, Titles VI (Chapters 1 and 2), XIII (Chapter 4) and XIII of the Civil Code and Chapter III, particularly section 40 et seq. of the Code of Procedure in Civil Actions (Act No. 190). Explanatory lectures and illustrative Philippine and American Cases are given.

Textbook: Civil Code; Outline of the Law of Property by Bocobo.

2 hours a week (Class); first semester; credit 2 units.

LAND REGISTRATION.—This course comprehends the fundamentals of the law on ordinary and cadastral land registration in force in the Philippine Islands, including a historical and comparative survey of the genesis, importance and relation of the different Torrens systems, and laying particular stress on who can be the applicants, what plans and technical documents must accompany an application, the relative weight and value of Spanish land titles, the filing of answers, claims and oppositions and the necessary evidence to support same, in connection with the general doctrines and policies affecting the administration and disposition of public agricultural lands and the general practice of land surveying.

2 hours a week (Class); second semester; credit 2 units.

GEOLOGY

Geology 13; **MINERAL RESOURCES.**—An elementary course including (1) a consideration of the mineral resources of the United

States and the Philippine Islands, and of foreign deposits which contribute largely to our mineral supplies; (2) a study of their importance in the industrial life of the nations; some consideration is given to the geologic conditions under which deposits of economic value are found; (3) a brief study of the common minerals of economic importance; and (4) excursions to points of economic interest in and about Manila.

Textbook: *Economic Aspects of Geology*, by Leith.

3 hours a week (Class), and occasional laboratory and field trips; second semester; credit 3 units.

ACCOUNTING

SURVEYING ACCOUNTING.—This subject is designed to prepare the student to act as guardian of government funds and property, including the keeping of cashbook and the rendition of various accounting reports. Laws, circulars, rules and regulations touching on the accounting of funds and property, and some office organization and administration as it affects the use of money and property, are taught in this subject. Students finishing this course, upon being appointed as special collecting officer or as special disbursing officer, in addition to their duties as surveyor, are prepared to deal with any government officer or with any person regarding the handling, custody or disposition of money and property.

1 hour a week (Class); second semester; credit 1 unit.

DRAWING

Drawing 112; *SURVEYING DRAWING*.—Care and use of instruments; lettering; conventional signs. The various elements of map-making such as laying out traverses by various methods, are studied.

6 hours a week (Drafting); first semester; credit 2 units.

LAND MAPPING.—This course is an advanced study of map-making such as plotting a map or chart by a system of plane coordinates, either polar (azimuth or bearing and distance) or rectangular (latitudes and departures). Each student is required to plot maps from his own field notes as well as from notes of the Bureau of Lands surveys of regions which the student has not seen. Special attention is given to preparing well finished lettering and the use of the conventional signs in accordance with the Executive Order No. 47, series 1912.

Prerequisite: Drawing 112.

3 hours a week (Drafting); first semester; credit 1 unit.

SURVEYING

S. S. 111; *PLANE SURVEYING*.—This subject covers exactly the same ground as C. E. 211. The only difference is that because trigonometry is taken simultaneously with, rather than before this course, S. S. 111 is specially arranged so that only taping, leveling and the use and care of instruments is given during the first weeks of the course while the students are being grounded in the elements of logarithms and plane trigonometry in Mathematics 13.

Prerequisite: Mathematics 13 must be taken simultaneously or be completed.

Textbook: Plase Surveying by Breed and Hosmer, Vol. I.

8 hours a week (2 Class, 6 Field); first semester; credit 4 units.

C. E. 221; *TOPOGRAPHIC SURVEYING*.—In this course the theory of stadia measurements, trigonometric and barometric leveling, hand levels and other types of instruments used in reconnaissance surveys are studied. Field work consists of making topographic surveys by level, transit, plane table and stadia methods. Finished maps are made from each of the above surveys.

Prerequisite: S. S. 111 or C. E. 211.

Textbook: Higher Surveying by Breed and Hosmer, Vol. II.

8 hours a week (2 Class, 6 Field); second semester; credit 4 units.

C. E. 311; *ADVANCED SURVEYING*.—Reconnaissance and preliminary surveying for highways and railroads. Curves: simple, compound, reverse and transition curves. Frogs and switches.

Prerequisite: C. E. 221.

Textbook: Railroad Curves and Earthwork with Tables, by Allen.

4 hours a week (1 Class, 3 Field); first semester; credit 2 units.

S. S. 216; *GEODETIC SURVEYING*.—This course covers the elements of geodesy; particular importance is given to the study of various methods of executing precise traverses, triangulations and leveling, including the rigid adjustment and distribution of errors necessary in surveys of these kinds. Methods of geodetic mapping and camera and aerial surveying are also studied.

Prerequisite: C. E. 221.

Textbook: Geodesy by Hosmer.

References: 1. General Instruction for the Field Work of the U. S. Coast and Geodetic Survey.

2. Manual of Triangulation Computation and Adjustment, by Walter Reynolds.

4 hours a week (1 Class, 3 Field); first semester; credit 2 units.

C. E. 321; *ADVANCED SURVEYING*.—Each work setting slope stakes, computation of earth work, and mass diagram. Measurement of flow in rivers. Sounding and setting ranges for dredging. Elements of geodesy. Elements of Practical Astronomy; latitude, longitude and determination of the true meridian.

Prerequisite: C. E. 221.

Textbooks: Railroad Curves and Earthwork with Tables, by Allen; and Higher Surveying, by Breed & Hosmer.

4 hours a week (1 Class, 3 Field); second semester; credit 2 units.

S. S. 217; *FIELD ASTRONOMY*.—This course covers the determination of latitude, longitude, time and azimuth by stellar observations. It is designed to give a more advanced and thorough training in this subject for the students of surveying than is covered in C. E. 321 because of their greater need for proficiency in his work.

Prerequisite: Must be taken, simultaneously with, or after C. E. 321.

3 hours a week; second semester; credit 1 unit.

S. S. 218; *MINING SURVEYING AND LAWS*.—A course designed to give the students knowledge of the principles of the surface and underground surveys necessary in obtaining title or rights to the mineral lands

of the Philippine Islands, the surveys for the location of the surface improvements and boundary lines of mining claims and leases, as well as the underground surveying necessary in making connections, laying out work, determining the relation of the underground workings to the surface lines, points, etc., and measuring the ore removed or still in the mine. It also covers the study of laws, rules and regulations pertaining to mineral lands in the Philippines with particular reference to the Act of Congress of July 1, 1902 as amended by Act of Congress of February 6, 1905, and Act No. 624 of the Philippine Commission, the Coal Land Act No. 2719, and the Petroleum Act No. 2932 of the Philippine Legislature, as well as opinions of the Attorney-General and administrative and judicial decisions relative thereto.

Textbooks: *Plane Surveying*, by Breed & Hosmer; *Compilation of laws and Regulations Relating to Public Lands in the Philippine Islands*.

References: Brief Description of the Philippine Mining Laws, Rules and Regulations, Bulletins of the Bureau of Lands relating to the disposition of Mineral Lands and Philippine Reports.

2 hours (Class); first semester; credit 2 units.

S. S. 219; *ISOLATED LAND SURVEY AND COMPUTATION*.—This course aims to explain the execution of surveys of all isolated portions of lands designated as tracts, lots, or parcels, used for residential, agricultural, industrial or any other purpose, in accordance with the existing rules and regulations governing land surveys in the Philippines. It comprises also the study of the different methods of computations, as well as the calculations of subdivisions of a tract of land.

Prerequisite S. S. 111 or C. E. 211.

Text: *Manual of Regulations Governing Land Surveys in the Philippines*.
10 hours a week (1 Class 9 Field); first semester, credit 4 units.

S. S. 227; *CADASTRAL LAND SURVEYING*.—A course given to teach the students the methods of executing the surveys of lots comprised in a municipality or portion thereof, not less than 100 lots, for general land registration proceedings, irrigation projects, agricultural development, or for any other purpose, pursuant to the provisions of the Cadastral Act No. 2259 as amended; Act No. 3240; Act No. 3327; Sections 1850 to 1957, inclusive, of the Administrative Code of 1917; Act No. 2711 as amended; the Irrigation Act No. 2152 as amended; or of similar acts which may hereafter be enacted.

Prerequisite: Isolated Land Surveying, S. S. 219.

Text: *Manual of Regulations Governing Land Surveys in the Philippines*.
11 hours a week (2 Class, 9 Field); second semester; credit 5 units.

LAND SURVEYING PRACTICE 231.—During the summer vacation the students are sent out by the Bureau of Lands to different survey parties in the Provinces where they are assigned in various survey work.

Credit 8 units.

LECTURES

ENGINEERING LECTURES.—This course is designed especially for Freshmen and its purpose is to show them what engineering is and the scope of its field. The lectures are non-technical.

1 hour a week (Lecture); first semester; credit 0 unit.

The College of Law

ADMINISTRATIVE OFFICERS

President of the University: DR. RAFAEL PALMA

Dean of the College: Professor JORGE BOCOBO

Secretary: Professor MELQUIADES J. GAMBOA

BUSINESS DIRECTORY

OFFICE OF THE DEAN: The Office of the Dean is located in Room No. 113 on the first floor of the University Hall.

TELEPHONE CONNECTION: Tel. 5-69-21.

CORRESPONDENCE: Address all communications to the Dean, College of Law, University of the Philippines, Manila, P. I.

MEMBERS OF THE FACULTY

PERMANENT MEMBERS

JORGE BOCOBO, LL.B., LL.D.

Professor of Civil Law, Dean of the College of Law.

RAFAEL PALMA, A.B., LL.B., LL.D.

Professor of Legal Philosophy; President, University of the Philippines.

GEORGE A. MALCOLM, A.B., LL.B., J.D., LL.D.

Professor of Public Law; Associate Justice of the Supreme Court.

JOSE A. ESPIRITU, LL.B.

Professor of Mercantile Law.

VICENTE G. SINCO, A.B., LL.B., LL.M.

Professor of Political Law.

ALEJO LABRADOR, A.B., LL.B.

Professor of Jurisprudence.

MELQUIADES J. GAMBOA,¹ A.B., LL.B., LL.M.

Associate Professor of Jurisprudence and Secretary, College of Law.

PIO DURAN, A.B., LL.B., LL.M.

Associate Professor of Mercantile Law.

GERARDO FLORENDO, A.B., LL.B.

Associate Professor of Civil Law.

FRANCISCO CAPISTRANO, A.B., LL.B.

Assistant Professor of Law.

VICENTE LONTOK, LL.B., LL.M.

Assistant Professor of Law.

1. Fellow, Oxford University, England.

PROFESSORIAL LECTURERS

E. FINLEY JOHNSON, B.S., LL.B., LL.M.,

Formerly Justice of the Supreme Court; Professorial Lecturer on Statutory Construction.

NORBERTO ROMUALDEZ, A.D., LL.B., D.C.L.,

Formerly Justice of the Supreme Court, Manila; Professorial Lecturer on Modern Civil Law.

ANTONIO VILLA-REAL,

Justice of the Supreme Court; Professorial Lecturer on Criminology and Penology, and Practice Court.

JOSE ABAD SANTOS, LL.B., LL.M.,

Secretary of Justice, Professorial Lecturer on Jurisprudence.

JOSE P. LAUREL, LL.B., L.Jur.; D.C.L.,

Professorial Lecturer on Constitutional Law and Municipal Government.

DELFIN JARANILLA, LL.B.,

Attorney-General, Professorial Lecturer on Advanced Philippine Constitutional Law.

ANACLETO DIAZ, L.J.S.,

Judge, Court of First Instance, Manila; Professorial Lecturer on Criminal Law.

EULOGIO P. REVILLA, A.B., L.C.J.,

Judge, Court of First Instance, Manila; Professorial Lecturer on Criminal Procedure.

ENRIQUE ALTAVAS, A.B., LL.B.,

Chief of the General Land Registration Office; Professorial Lecturer on Land Registration and Mortgages.

FRANCISCO A. DELGADO, LL.B., LL.M.,

Representative for Bulacan, 1st District; Professorial Lecturer on Remedial Law.

MARIANO H. DE JOYA, LL.B., LL.M.,

Professorial Lecturer on Remedial Law.

GUILLERMO B. GUEVARA, LL.B., LL.M.,

Professorial Lecturer on Criminal Law.

JOSÉ YULO, LL.B.,

Professorial Lecturer on Private Corporations.

VICENTE SANTIAGO, LL.B., LL.M.,

Professorial Lecturer on Obligations.

ROBERTO REGALA, A.B., B.S.G., LL.B., J.S.D.,

Secretary, Public Service Commission; Professorial Lecturer on Public International Law.

FRANCISCO VENTURA, B.A., M.A., LL.B. LL.M.,

Assistant Attorney, Bureau of Justice, Professorial Lecturer on Land Registration and Mortgages.

JUAN T. SANTOS, A.B., LL.B., LL.M., D.C.L.,

Professorial Lecturer on Trial Practice.

LEONCIO B. MONZON, A.B., LL.B.,

Professorial Lecturer on Bailments and Carriers.

SIXTO DE LOS ANGELES, A.B., M.D.

Professor and Head of the Department of Legal Medicine, College of Medicine; Lecturer on Legal Medicine.

THE COLLEGE OF LAW

HISTORY AND ORGANIZATION

The Board of Regents provided for the establishment of the College of Law, University of the Philippines, on January 12, 1911. The College was opened with two classes in July of the same year. The entrance requirement was then graduation from a government or an approved private high school, but with provision that one year later the completion of one year of college work was to be a prerequisite to admission. On July 1, 1913, the requirement was raised to completion of two years of college work. Both a three- and a four-year course were then offered. Beginning with the academic year 1917-1918 the three-year course was discontinued, except for those previously enrolled, and the four-year course made fundamental with 113 units required for graduation. At present the number of units required for graduation is 118. The College of Law is therefore committed to a four-year law course based on two years of pre-legal collegiate training. Leading members of the bar and judiciary and eight instructors, devoting their time exclusively to the school, compose the faculty.

PURPOSE

The College of Law has five principal purposes: (1) To prepare the students by thorough and practical legal instruction, conducted in the English language covering all the fundamental law subjects, for the practice of law in the Philippines; (2) to graduate leaders for the country; (3) to contribute to Philippine legal literature and jurisprudence; (4) to bring repute to the Philippine people abroad by the standard of work done and to be of general use to the people of the Islands; and (5) to take the lead in the fostering of University activities and spirit and in law school matters generally.

AFFILIATIONS

The College of Law is a member of the Association of American Law Schools, a member of the Bureau of Comparative Law of the American Bar Association, and a "recognized and approved law school."

EQUIPMENT AND LIBRARY

The College of Law is housed in the west wing of the University Hall known as the University Hall Annex. The classes are held on the second floor, the day classes beginning at 2:00 o'clock in the afternoon, and the evening classes at 5:30.

The Law Library occupies the entire first floor of the College building. The library now contains more than 9,500 volumes, including a complete set of American Supreme Court Reports, the National Reporter System, the United States Code Annotated, the Philippine Reports, digests and public laws, the "jurisprudencia civil" (civil jurisprudence) of Spain, the "jurisprudencia criminal" (criminal jurisprudence) also of Spain, and a large number of civil, criminal commercial, and international law texts and treatises by American, English, Spanish and other continental authors. It also contains valuable collections of annotated cases including the American Decisions, the American Law Reports, Lawyers Report Annotated, the

English Ruling Cases, the British Ruling Cases, besides extensive collections of legal periodicals, digests and encyclopedias. By September 1, 1932, the library shall have over 10,000 volumes. The students have also access to the National Library and to the Library of the Supreme Court.

UNDERGRADUATE COURSE REQUIREMENTS FOR ADMISSION

Applicants for admission to the College of Law must have completed the two-year preparatory law course in the College of Liberal Arts, or in any other recognized and approved college or university authorized by the Secretary of Public Instruction to give a preparatory law course. The applicant must have finished sixty required units in arts and sciences and must pass the prescribed entrance examination. Honor students and holders of a four-year college degree, or higher, granted by an institution recognized by the Secretary of Public Instruction, are exempted from the entrance examination.

REQUIREMENTS FOR GRADUATION

No student will be recommended to the University Council for graduation with the degree of Bachelor of Laws, unless he has satisfactorily completed all the courses prescribed in this College with the general average of not less than 2.75, and has fulfilled all the requirements generally prescribed for graduation from the University, such as Physical Education, Military Science, etc.

COURSES OF INSTRUCTIONS

FIRST YEAR

ELEMENTARY LAW.—This course gives a general view of the development of the law and rights, remedial and substantive; a description of the sources of the law in force in the Philippines, and a systematic outline of the principal branches of the law. Its chief purposes are to set forth the fundamental conceptions which underlie every department of the principal branches of the law, and to indicate the subject and scope of the various courses offered in the curriculum. The following subjects are also covered: Where to find the law; how to use decisions and statutes (including study of cases); how to find the law; legal bibliography.

Textbook: Gamboa, Philippine Elementary Law, Second Edition.

Reference book: Cooley's Brief Making and the Use of Law Books.

2 hours a week (Class); first semester, credit 2 units.

Professors GAMBOA and LONTOK.

INSTITUTES OF CIVIL LAW.—A study of the evolution of Roman Law from the earliest period to the completion of the Corpus Juris, with a critical analysis of the Institutes. Followed by a historical survey of the development of the civil law as now existing in the Philippines. Syllabi and text of the Institutes. A companion course to Elementary Law, serving to introduce civil law.

Textbooks: Bernard, First Year of Roman Law; Lobingier, The Evolution of the Civil Law; Hammond, Sandars Justinian.

4 hours a week (Class); first semester, credit 4 units.

Professor FLORENDO.

PERSONS AND FAMILY RELATIONS.—Based on Book I and Book IV, Title III, of the Civil Code; the Spanish Marriage Law of 1870; Act 3613, New Marriage Law; the Divorce Law Act 2710; sections 551-581 and 765-772 of the Code of Civil Procedure. Outlines, recitations, and assigned cases.

Textbooks: Bocobo, Outlines of the Law of Persons and Family Relations; Tiffany's Persons and Domestic Relations.

Reference Books: Manresa's Commentaries on the Civil Code.

3 hours a week (Class); first semester, credit 3 units.

Dean BOCOBO and Professor FLORENDO.

PHILIPPINE GOVERNMENT.—Its development and fundamentals together with an analysis of the structure and functions of the present Insular Government. Particular emphasis is laid upon legislative organization, powers, and procedure. Textbooks, recitations, assigned reading, and reports.

Textbook: Sinco, Philippine Government and Political Law.

3 hours a week (Class); first semester, credit 3 units.

Professor SINCO.

READING COURSE I.—Private reading of assigned books: Cooley and Ames, Brief Making and Use of Law Books; Lee, Historical Jurisprudence; Morris, History of the Development of the Law; Pollock, Expansion of the Common Law; General Survey of Events, Sources, Persons, and Movements in Continental Legal History; outlines of articles in current law magazines. Group meetings, outlines of work covered, and examinations.

First semester, credit ½ unit.

Professor FLORENDO.

CRIMINAL LAW.—Study of the Penal Code, of the penal portions of the Administrative Code and other penal acts. Outlines, recitations, and assigned cases from the Philippine Reports.

Textbook: The Revised Penal Code of the Philippines; Guevara, Outlines on Crimes; Guevara, Essentials of Criminal Law and Criminology.

References: Viada, Comentarios al Código Penal.

6 hours a week (Class); second semester, credit 6 units.

Professors CAPISTRANO, GUEVARA, and DIAZ.

OBLIGATIONS (Contracts).—A study of the general principles of obligations, contracts, and quasi contracts under the civil law with comparative inquiries into the American Law. Based on Book IV, Titles I, II, XII (chapters 1, 3), XIII, XVI (chapter 1), of the Civil Code. Outlines, recitations, and assigned work, including cases from the Philippine and American Reports.

Textbook: Bocobo, Outlines of the Law of Obligations.

Reference books: Manresa's Commentaries on the Civil Code; Bishop on Contracts.

5 hours a week (Class); second semester, credit 5 units.

Dean BOCOBO and Professor FLORENDO.

PUBLIC SPEAKING AND ORATORY.—Elements of elocution and argumentation. Recitation and practice with criticism. A study of the lives of great orators; analysis of the world's greatest orations. Partic-

ular attention is given to forensic oratory. Each student must write one complete and finished oration.

Textbooks: Fulton and Trueblood, *Essentials of Public Speaking*; Laycock and Scales, *Argumentation and Debate*. Shurter, *Rhetoric of Oratory*; Shurter, *Masterpieces of Modern Oratory*. Textbook on Philippine Eloquence in preparation.

2 hours a week (Class); second semester, credit 2 units.

Professor LONTOK.

--- *READING COURSE (II)*.—Continuation of Reading Course (I).

Second semester, credit ½ unit.

Professor FLORENDO.

SECOND YEAR

AGENCY.—Based on Book IV, Book II, Title III, of the Code of Commerce. Assigned cases from the Philippine and American Reports.

Textbook: Goddard's *Cases on Agency*.

2 hours a week (Class); first semester, credit 2 units.

Professor ESPIRITU.

SALES.—A study of the law of purchase and sale, with comparative inquiries into the American law. Based on Book IV, Titles IV and V of the Civil Code, and Book II, Title VI of the Code of Commerce. Outlines and recitations. Assigned cases from the Philippine and American Reports.

Textbook: Capistrano, *Philippine Law on Sales*.

Reference books: Williston on Sales; Mechem on Sales; Manresa's Commentaries on the Civil Code.

2 hours a week (Class); first semester, credit 2 units.

Professors DURAN and CAPISTRANO.

ELEMENTARY PROCEDURE.—A study of the history and purpose of procedure; the organization and jurisdiction of the courts; and the general principles of remedial law, including the elements of common-law pleading. Special attention to the inferior courts. Outlines, recitations, and assigned work.

Textbooks: De Joya, *Code of Civil Procedure, Annotated*; De Joya, *Outlines of Elementary Procedure*.

References: Bryant's *Code Pleading*; Phillips on *Code Pleading*.

2 hours a week (Class); first semester, credit 2 units.

Professor GAMBOA.

PROPERTY.—Includes both Real and Personal Property. A study of Book II; Book III, Titles I, II; Book IV; Titles VI (chapters 1, 2), VII, XII (chapter 4), XVIII of the Civil Code; chapter III, Code of Civil Procedure.

Textbook: Bocobo, *Outlines of the Law of Property*.

Reference books: Manresa's Commentaries on the Civil Code.

Professor CAPISTRANO.

4 hours a week (Class); first semester, credit 4 units.

TORTS AND DAMAGES.—A study of Torts and Damages under the Civil Law and Common Law. Recitations.

Textbooks: Chapin, Cases on Torts; Cooley, Cases on Damages; Labrador, Outlines on Torts and Damages in Philippine Law.

3 hours a week (Class); first semester, credit 3 units.

Professors LABRADOR and DURAN.

READING COURSE (III).—Private reading of assigned texts: Lombroso, Crime, Its Causes, and Remedies; De Quiros, Modern Theories of Criminality; Garofalo, Criminology; Parmelee, Criminology; Tarde, Penal Philosophy; digest of articles on criminology in current law magazines.

First semester, credit $\frac{1}{2}$ unit.

Professor SINCO.

PHILIPPINE BARRISTERS (I).—General Training in Parliamentary practice, and forensic oratory.

1 hour a week (Class); first semester, credit $\frac{1}{2}$ unit.

Professors LONTOK and CAPISTRANO.

ADMINISTRATIVE LAW.—The law governing administrative action, including the law of officers and elections and extraordinary remedies. Based on portions of the Administrative Code.

Textbooks: Sinco, Cases on Administrative Law; Goodnow's Cases on the Law of Officers; Freund, Cases on Administrative Law.

3 hours a week (Class); second semester, credit 3 units.

Professors SINCO and CAPISTRANO.

BAILMENTS AND CARRIERS.—Brief consideration of bailments in general, with particular attention to the law of pledges, innkeepers, and common carriers of goods; carriers of passengers; the post office and telegraph and telephone companies, as carriers of the mail and intelligence. Based on Book IV, Titles VI, (chapter 3), X, XI, XV (chapter 2), of the Civil Code; Book II, Titles IV, V, VII, of the Code of Commerce, and various Acts of the Philippine Legislature, and assigned cases from the Philippine and American case law.

Textbooks: Goddard, Outlines of Bailments and Carriers: Goddard's Cases on Bailments and Carriers.

2 hours a week (Class); second semester, credit 2 units.

Professors CAPISTRANO and SANTIAGO.

MERCANTILE LAW.—Based on Book IV, Title XIV, of the Civil Code; Book I, Titles I, II, III, IV, and Book II, Titles IX, XI, XII, XIII of the Code of Commerce; the Warehouse Receipts Law; and the Negotiable Instruments Law, including suretyship assigned cases.

Textbooks: Espiritu, Outlines on Mercantile Law; Espiritu, Annotated Code of Commerce; Smith and Moore, Cases on Bills and Notes.

Reference Books: Ogden's Negotiable Instruments; Corpus Juris, Vol. VIII.

4 hours a week (Class); second semester, credit 4 units.

Professors ESPIRITU and DURAN.

PARTNERSHIP.—Based on Book IV, Title VIII, of the Civil Code, and on Book II, Title I, sections 1, 2, 3, 4, 5, 6, and 13, and Title II, of the Code of Commerce, and assigned cases.

Textbooks: Gilmore, Partnership; Gilmore, Cases on Partnership.

2 hours a week (Class); second semester, credit 2 units.

Professor GAMBOA.

READING COURSE (IV).—Selected Essays in Anglo-American Legal History; Hill, Decisive Battles of the Law; Pollock, Maine's Ancient Law; Wigmore, Principles of Judicial Proof.

Second semester, credit ½ unit.

Professor FLORENDO.

PHILIPPINE BARRISTERS (II).—Continuation of Barristers I.

1 hour a week; second semester credit ½ unit.

Professors GAMBOA and CAPISTRANO.

THIRD YEAR

CIVIL PROCEDURE.—Study of the Code of Civil Procedure as amended, and of portions of the Administrative Code. Outlines and assigned cases from the case book and the Philippine and California Reports. Code pleading and practice is emphasized.

Textbooks: Sunderland's Cases on Code Pleading; De Joya, Code of Civil Procedure, Annotated.

References: Bryant's Code Pleading; Phillips on Code Pleading; Pomeroy's Code Remedies.

5 hours a week (Class); first semester credit 5 units.

Professors DELGADO and LABRADOR.

ADMIRALTY.—Study of Book III, Titles, I, II, III (sections 1, 2), IV, V, of the Code of Commerce; and of Acts 2507 and 2616. Assigned cases.

Textbooks: Espiritu, Outlines on Admiralty; Espiritu, Annotated Code of Commerce.

Reference books: Hughes on Admiralty; Ames, Cases on Admiralty.

1 hour a week (Class); first semester, credit 1 unit.

Professor ESPIRITU.

WILLS, DESCENT, AND ADMINISTRATION.—Study of the law of succession *mortis causa*, including the nature of wills; formalities prescribed by law for the due execution of wills; the probating of wills; the administration of decedent's estates, etc. Based on Book III, Title III of the Civil Code; sections 582-764 and 773-783 of the Compiled Code of Civil Procedure; and portions of the Administrative Code and Land Registration Law. Outlines and recitations. Assigned cases.

Textbooks: Costigan's Cases on Wills and Administration; Bocobo and Noble, Outlines on the Law of Wills, Descent, and Administration.

Reference Book: Manresa's Commentaries on the Civil Code.

3 hours a week (Class); first semester, credit 3 units.

Professors FLORENDO and SANTIAGO.

PRIVATE CORPORATIONS.—Based on the Corporation Law and the Public Utility Law, and portions of other laws and the Code of Commerce. Recitations; assigned cases.

Textbook: Richard, Cases on Private Corporations.

Reference books: Elliot on Private Corporations; Clark on Corporations.

2 hours a week (Class); first semester, credit 2 units.

Professor *ESPIRITU*.

PUBLIC CORPORATIONS.—Essential principles, cases, and discussion of current questions in municipal government, and the local law. Subjects for special study: Government ownership of public utilities; State regulation of prices of commodities; the State in its relation to labor, bond issues, the influence of public opinion, etc.

Textbooks: Macy, Cases on Municipal Corporations; Tooke, Cases on Municipal Corporations; Elliot, Municipal Corporations; Sinco, Outlines on Public Corporations.

2 hours a week (Class); first semester, credit 2 units.

Professor *SINCO*.

BANKRUPTCY AND INSOLVENCY.—Study of the Bankruptcy and Insolvency Law. Preparation of papers; recitations.

Textbook: Holbrook and Aigler, Cases on Bankruptcy.

1 hour a week (Class); first semester, credit 1 unit.

Professor *DURAN*.

READING COURSE (V).—Wellman, Art of Cross-Examination, A Day in Court; Elliott and Elliott, The Work of the Advocate; Baldwin, The Young Man and the Law; Richards, Lincoln as a Lawyer; articles in current law magazines on procedure and evidence.

First semester, credit ½ unit.

Professor *SINCO*.

PRACTICE CLUBS.—Justice of the peace practice.

First semester credit ½ unit.

Professors *DELGADO*, *JARANILLA* and *REVILLA*.

PHILIPPINE BARRISTERS (III).—Drill in forensic oratory.

First semester, credit ½ unit.

Professors *LONTOK* and *CAPISTRANO*.

CONSTITUTIONAL LAW.—The course is divided into five parts: I. Introductory; II. Comparative, including a study of the Constitutions of England, the United States, Spain, Cuba, Mexico, Japan, Australia, and Malolos; III Historical—the Constitutional History of the Philippines; IV. Fundamental; and V. Constitutional limitations.

Textbook: Malcolm, the Constitutional Law of the Philippine Islands; Laurel, Cases on Constitutional Law; Hall, Casebook on Constitutional Law; Sinco, Cases on Philippine Constitutional Law.

3 hours a week (Class); second semester, credit 3 units.

Professors *SINCO* and *LAUREL*.

EVIDENCE.—Based principally on sections 273-376 and 381-383 of the Compiled Code of Civil Procedure, and sections 55-63 of G. O. No. 58. Recitations and assigned cases.

Textbooks: Wigmore's Cases on Evidence, new ed.; De Joya, Outlines on Evidence; De Joya, Annotated Code of Civil Procedure.

References: Wigmore on Evidence; Wellman's The Art of Cross-Examination.

4 hours a week (Class); second semester, credit 4 units.

Professors *DELGADO* and *LABRADOR*.

¹ Fellow, Oxford, England.

PRIVATE CORPORATIONS.—Continuation of course of first semester.

2 hours a week (Class); second semester, credit 2 units.

Professors *ESPIRITU* and *YULO*.

INSURANCE.—Based on Book IV, Title XII (chapter 1, 2), of the Civil Code, and on the Insurance Act, as amended. Recitations; assigned cases from the Philippine, American and English Reports.

1 hour a week (Class); second semester, credit 1 unit.

Professor *GAPISTRANO*.

TAXATION.—Based on portions of Acts of Congress and the Administrative Code. Assigned Philippine and American cases.

Textbook: Goodnow's Cases on taxation.

1 hour a week (Class); second semester, credit 1 unit.

Professor *CAPISTRANO*.

MINING AND IRRIGATION LAW.—Lectures with assigned work. Based on the Spanish Law of Waters of August 3, 1866, the Irrigation Law, sections 15, 20-62 of the Philippine Bill, and Acts of the Philippine Legislature.

References: Costigan, Mining Law; Lindley on Mines.

1 hour a week (Class); second semester, credit 1 unit.

Professors *CAPISTRANO* and *VENTURA*.

EXTRAORDINARY LEGAL REMEDIES.—A comparative study of the writs of mandamus, injunction, prohibition, certiorari, quo warranto and habeas corpus, by outlines, Philippine and American decisions and authoritative texts.

References: High, Extraordinary Legal Remedies and Bailey on Habeas Corpus.

1 hour a week (Class); second semester, credit 1 unit.

Professor *LABRADOR*.

READING COURSE (VI).—Law reform and development of the law as instigated by great legal novelists: Hugo, Les Miserables and Last Days of a Condemned Man; Dickens, Bleak House, Little Derriitt, Pickwick Papers, Oliver Twist; Reade, Foul Play, Never Too Late to Mend; Doyle, Micah Clarke; Stevenson, Kidnapped, David Balfour; Ford, Honorable Peter Stirling; Gaboriau, File No. 115; Hawthorne, Scarlet Letter; Tolstoi, Resurrection; Train, Tutt and Mr. Tutt, By Advice of Counsel, True Stories of Crimes, Courts, Criminals, and the Camorra, The Prisoner at the Bar, The Confessions of Artemas Quibble; Galsworthy, Justice; McMurdy, Upas Tree; Rizal, Social Cancer, Reign of Greed; Van Dine, The Benson Murder Case, The Canary Murder Case. Outlines: Purpose of the story, the teaching or doctrine of the author, remedy suggested, comparison of the law of the times with Philippine law, suggested changes in local law.

Second semester, credit ½ unit.

Professors *GAMBOA* and *CAPISTRANO*.

PRACTICE CLUBS (II).—Argument and decision of cases before Supreme Courts on agreed statements of facts.

Second semester, credit ½ unit.

Professors *DELGADO*, *JARANILLA* and *REVILLA*.

PHILIPPINE BARRISTERS (IV).—Drill in parliamentary law. Reference: Robert's Rules of Order.

Second semester, credit $\frac{1}{2}$ unit.

Professor CAPISTRANO.

FOURTH YEAR

CONVEYANCING.—Practical work in the preparation of all the more important forms of conveyances, including deeds, mortgages, wills and assignments of various sorts, contracts, agreements, corporate and partnership articles, and such other instruments as the lawyer in actual practice is likely to be called upon to prepare. The Notarial Law and other portions of the Administrative Code are also studied.

Textbook: Camus and Sinco, Philippine Annotated Forms.

References: Church, Legal and Business Forms; Cowdery's Legal Forms; Fisher, New Encyclopaedia of Philippine Legal Forms; Birdeye's Abbott's Encyclopaedia of General Business and Legal Forms; Gordon, Annotated Forms of Agreement.

2 hours a week (Class); first semester, credit 2 units.

Professor GAMBOA.

CODE REVIEW (Criminal Procedure).—A general survey and review of Criminal Procedure in its broadest sense.

Textbooks: Guevara, Code of Criminal Procedure, annotated; Guevara, Outlines on Criminal Procedure.

2 hours a week (Class); first semester, credit 1 unit.

Professors GUEVARA and LABRADOR.

LEGAL MEDICINE.—It aims to cover the points most essential to the subject necessary to make the lawyer acquainted with the leading facts and principles of medicine and their application to the requirements of the law and the administration of justice. It is designed especially to meet the needs of the legal profession in the Philippines.

Specimens, charts, pictures, and other museum specimens illustrative of various branches of legal medicine, are used to facilitate instruction.

The students, in order to further their general knowledge on the subject and to enable them to examine medical men testifying as experts, are allowed to join the medico-legal students of the College of Medicine once a month during the second semester without additional credit.

Textbooks: Angeles, S. de los, Legal Medicine, with reference to the Philippine Law and the Reports of the Philippine Supreme Court.

Collateral Reading: Wharton & Stillé's, Medical Jurisprudence; Steward, Legal Medicine.

2 hours a week (Class); first semester.

Credit 2 units.

Professor S. DE LOS ANGELES.

PUBLIC INTERNATIONAL LAW.—Lectures, with assigned reading from Moore's Digest of International Law.

Textbook: Lawrence, Principles of International Law.

References: Hudson, Cases on International Law; Hall's International Law (7th ed.); Wilson on International Law.

2 hours a week (Class); first semester, credit 2 units.

Professors SINCO and REGALA.

TRIAL PRACTICE.—Study of text and outlines; preparation of pleadings; brief making, and criticism of work in Practice Court. Includes work in Legal Clinic, which is open thruout the year. Assigned cases from the Case Book and Philippine Reports.

Textbooks: Sunderland, Cases on Trial Practice; De Joya, Outlines on Trial Practice

3 hours a week (Class); first semester, credit 3 units.

Professors DIAZ and DE JOYA.

LAND REGISTRATION AND MORTGAGES.—Based on the Philippine Bill, sections 13-18, 63-65; section 9, Jones Law; portions of the Administrative Code; the Friar Lands Act; the Public Land Law; the Land Registration Law; the Cadastral Act, as amended; the Spanish Mortgage Law; the Regulations for the enforcement of the Mortgage Law; and the Chattel Mortgage Law; assigned cases from the Philippine Reports; practical exercises.

Textbooks: Altavas, Land Registration, 2nd ed.; Altavas on Mortgages.

4 hours a week (Class); first semester, credit 4 units.

Professors ALTAVAS and VENTURA.

LEGAL ETHICS.—Study of text; canons of professional ethics, and assigned Philippine cases; special reports; practical suggestions for practice.

Textbook: Malcolm, on Legal Ethics.

1 hour a week (Class); first semester, credit 1 unit.

Professor LABRADOR.

PRACTICE COURT.—The purpose of the court is to afford students practical instruction in pleading and practice and actual experience in the commencement and trial of cases through their stages.

2½ hours a week (Class); first semester, credit ½ unit.

Professor VILLA-REAL.

JUNIOR PHILIPPINE SENATE.—Legislative practice.

1 hour a week (Class); first semester, credit ½ unit.

Professor LABRADOR.

CODE REVIEW (Civil Law).—A general survey and review of civil law in its broadest sense.

3 hours a week (Class); second semester, credit 3 units.

Dean BOCOBO.

CODE REVIEW (Mercantile Law).—A general survey and review of mercantile law in its broadest sense.

3 hours a week (Class); second semester, credit 3 units.

Professor ESPIRITU.

CODE REVIEW (Remedial Law).—A general survey and review of Civil Procedure, Trial Practice and Evidence. Code Review (Criminal Procedure) is not included in this course, as it is given during the first semester.

2 hours a week (Class); second semester, credit 2 units.

Professors REVILLA and LABRADOR.

CODE REVIEW (Political Law).—A thorough review of the Political Law of the Philippine Islands, including Philippine government, the public

corporations, administrative law and constitutional law. The course is intended to coördinate the principles on these subjects and as preparation for the bar examination.

Texts: *Malcolm, The Constitutional Law of the Philippine Islands; Sinco, Philippine Government and Political Law.*

3 hours a week (Class); second semester, credit 3 units.

Professor SINCO.

CODE REVIEW (Criminal Law).—A general survey and review of criminal law in its broadest sense.

2 hours a week (Class); second semester, credit 2 units.

Professors ALBERT and GUEVARA.

PRIVATE INTERNATIONAL LAW.—Explanatory lectures; recitations; study of text; leading cases.

Textbooks: *Minor's Conflict of Laws; Lorenzen, Cases on Conflict of Laws.*

2 hours a week (Class); second semester, credit 2 units.

Professors REGALA and GARCIA.

PRACTICE COURT.—Follows same plan as in first semester.

2½ hours a week (Class); second semester, credit ½ unit.

Professor VILLA-REAL.

JUNIOR PHILIPPINE SENATE.—Legislative practice.

Second semester, credit ½ unit.

Professor LABRADOR.

THE CURRICULA

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
	Units		Units
Elementary Law	2	Criminal Law	6
Institutes of Civil Law....	4	Obligations	5
Persons & Family Relations	3	Public Speaking & Oratory.	2
Philippine Government	3	Reading Course (II).....	½
Reading Course (I)	½		
	<hr/>	Total	13½
Total	12½		

SECOND YEAR

<i>First Semester</i>		<i>Second Semertes</i>	
	Units		Units
Agency	2	Administrative Law	3
Sales	2	Bailments and Carriers....	2
Elementary Procedure	2	Criminal Procedure	2
Property	4	Mercantile Law	4
Torts and Damages.....	3	Partnership	2
Reading Course (III).....	½	Reading Course (IV).....	½
Philippine Barristers (I) ..	½	Philippine Barristers (II) ..	½
	<hr/>		<hr/>
Total	14	Total	14

THIRD YEAR

<i>First Semester</i>	Units	<i>Second Semertes</i>	Units
Civil Procedure	5	Constitutional Law	3
Admiralty	1	Evidence	4
Wills, Descent, and Adminis- tration	3	Private Corporations	2
Private Corporations	2	Insurance	1
Public Corporations	2	Taxation	1
Bankruptcy and Insolvency.	1	Mining and Irrigation Law.	1
Reading Course (V).....	$\frac{1}{2}$	Extraordinary Legal Reme- dies	1
Practice Club (I).....	$\frac{1}{2}$	Reading Course (VI).....	$\frac{1}{2}$
Philippine Barristers (III) .	$\frac{1}{2}$	Practice Clucs (II).....	$\frac{1}{2}$
		Philippine Barristers (IV) .	$\frac{1}{2}$
Total	15 $\frac{1}{2}$	Total	14 $\frac{1}{2}$

FOURTH YEAR

<i>First Semester</i>	Units	<i>Second Semertes</i>	Units
Conveyancing	2	Code Review: Civil Law...	3
Code Review: Criminal Pro- cedure	1	Code Review: Mercantile Law	3
Legal Medicine	2	Code Review: Remedial Law	2
Public International Law..	2	Code Review: Political Law	3
Trial Practice	3	Code Review: Criminal Law	2
Land Registration and Mort- gages	4	Private International Law.	2
Legal Ethics	1	Practice Court	$\frac{1}{2}$
Practice Clubs (II).....	$\frac{1}{2}$	Junior Philippine Senate...	$\frac{1}{2}$
Junior Philippine Senate...	$\frac{1}{2}$	Thesis	2
		Total	18
Total	16		

There is thus required for graduation the completion of 118 units, including 10 units granted for the practice court, briefs, reading courses, thesis, and other required work. Students who are not required to take the Junior Philippine Senate for 1 or 2 semesters have to complete only 117 $\frac{1}{2}$ or 117 units as the case may be.

GRADUATE COURSE

REQUIREMENTS FOR ADMISSION

A graduate course leading to the degree of Master of Laws is also offered. To this course may be admitted:

(1) Those who have received the degree of Bachelor of Laws from the University of the Philippines;

(2) Those who have received the degree of Bachelor of Laws, or an equivalent degree, from a law school which is a member of the Association of American Law Schools, or from other law school of similar standing

recognized and approved by the Secretary of Public Instruction, and who, on the date of enrollment, fulfill the entrance requirements in the College of Law, University of the Philippines.

REQUIREMENTS FOR GRADUATION

At least one year's residence and the satisfactory completion of the course amounting to 21 units in addition to the preparation of a thesis are prerequisites to recommendation for the degree. Every candidate must obtain a general average (on the basis of hours of credit) of $2\frac{1}{2}$. The thesis must be of marked excellence, at least 4,000 words in length, and must be a contribution to legal scholarship. The grade of the thesis on the basis of 5 units is taken into account in computing the general average. Students who are employed shall not be allowed to take more than 6 units a semester excluding the thesis.

COURSES OF INSTRUCTION

COMPARATIVE LAW (European).—A brief study of the important events which led to the codification of the laws of Continental Europe, followed by a comparative and analytical study of the provisions of some of these codes. Explanatory lectures and original research work by the students.

Textbooks: A General Survey, Continental Legal Series; German Civil Code; French Civil Code; Argentine Civil Code; Japanese Civil Code; Brazilian Civil Code.

Reference book: Sschester, Principles of German Civil Law.

2 hours a week (Class); first semester; credit 2 units.

Professor ESPIRITU.

EVOLUTION OF THE MODERN CIVIL LAW.—Traces its beginnings in the blending of native Teutonic, or Gothic law with the Roman survivals; the revival of Roman Law in Italy and the influence of the Canon Law; the "reception" of Roman Law in the adjacent countries—Spain, France, Germany, Switzerland, Holland; the expansion of the Civil Law through the growth of colonial systems, especially those of Spain, France, and Holland; the Codification movements; the rebirth of the Civil Law through the Napoleonic legislation; the common Law's indebtedness to Rome.

Syllabi, lectures, and directions for original research.

2 hours a week (Class); first semester, credit 2 units.

Professor ROMUALDEZ.

JURISPRUDENCE.—A study of the nature of law, the scope of effective legal action in adjusting human relations and regulating human acts, the modes of effective law making, and the application and enforcement of law.

Textbooks: Salmond's Jurisprudence and Holland's Elements of Jurisprudence. Special readings will be assigned.

2 hours a week (Class); first semester, credit 2 units.

Professor GAMBOA.

LAW REFORM.—A thorough and intensive study of how the laws in force in the Philippine Islands may be changed to meet actual conditions.

Definite reforms are proposed and fully discussed. Seminary work, lectures, recitations.

2 hours a week (Class); first semester, credit 2 units.

Dean BOCOBO and Professors SANTOS, LAUREL, DE JOYA, and ESPIRITU.

LEGAL HISTORY, BIOGRAPHY, AND LITERATURE.—A general survey of the events, persons, periods, and movements in the development of the laws of the peoples of the earth; the aims of the Historical School; accepted codes of moral, "natural," civil, and criminal law; the relation of the Civil Law and the Common Law; the great jurists of the world; legal masterpieces; the English, American, and Spanish bars.

References: Allen, *The Evolution of Governments and Laws: A general Survey* (Continental Legal History Series); MacDonald and Manson, *Great Jurists of the World*; Veeder, *Legal Masterpieces*; and others.

2 hours a week (Class); first semester, credit 2 units.

Professor GAMBOA.

THEORY AND PRACTICE OF LEGISLATION.—A study of the methods of procedure of legislative bodies, with special reference to the methods of the Philippine Congress. Mechanics of bill drafting.

1 hour a week (Class); first semester, credit 1 unit.

Professor LABRADOR.

COMPARATIVE LAW (Latin-American).—Continuation of the course of the first semester.

Textbooks: Argentine Civil Code, Civil Code of Chile.

Reference book: Giron, *Instituciones Políticas y Jurídicas de los Pueblos Modernos*.

2 hours a week (Class); second semester, credit 2 units.

Professor ESPIRITU.

CRIMINOLOGY AND PENOLOGY.—This is a seminary course, and the work includes the preparation, discussion, and criticism of papers dealing with the causes of crimes, prevention of crimes, reformation of criminals, and the different penitentiary systems.

Reference book: *The Modern Criminal Science Series*.

1 hour a week (Class); second semester, credit 1 unit.

Professor VILLA-REAL.

LEGAL PHILOSOPHY.—The legal philosophies of the world; development of the legal philosophy; the Neo-Kantian, Neo-Hegelian, and Positivist schools; evolution of ideas of law and the State; recent surveys of fundamental problems of law and punishment; relation of authority of the State to individual freedom of activity.

References: Berrolzheimer, *The World's Legal Philosophers*; Gareis, *Science of Law*; Pound, *Readings on the History and System of the Law*; *Modern French Philosophy* by Foulee, Charmont, Duguit, and Demogue; Tarde, *Penal Philosophy*; Lombroso and De Quiros, *Modern Theories of Crime and Criminology*; and current writers of the day.

2 hours a week (Class); second semester, credit 2 units.

President PALMA.

STATUTORY CONSTRUCTION.—A study of Philippine Statutory Construction, including an analysis of the provisions of Articles 3, 5, 7 of the Civil Code; sections 1-4, 286-94 of Act No. 190; sections 2-15 of the Revised Administrative Code, and assigned cases from Philippine and American Reports.

References: Malcolm, Philippine Government; Black, Interpretation of Laws.

1 hour a week (Class); second semester, credit 1 unit.

Professors JOHNSON and VILLA-REAL.

PUBLIC SERVICE CORPORATIONS AND COMMISSIONS.—A study of Philippine statutes governing public utilities; a discussion of Philippine and American cases on the subject.

1 hour a week (Class); second semester, credit 1 unit.

Professors JOHNSON and REGALA.

PRESENT TREND OF INTERNATIONAL LAW.—A seminary course dealing with the latest developments in public and private international law with special reference to recent treaties and the activities of the League of Nations and the Permanent Court of International Justice; special attention is given to the subject of the pacific settlement of international disputes and the Far Eastern questions.

2 hours a week (Class); second semester, credit 2 units.

Professors REGALA and SINCO.

ADVANCED PHILIPPINE CONSTITUTIONAL LAW.—A discussion of the important constitutional law questions which have arisen or may arise in the administration of the Philippine government.

1 hour a week (Class); second semester, credit 1 unit.

Professors SINCO and JARANILLA.

<i>First Semester</i>		<i>Second Semester</i>	
	Units		Units
Comparative Law	2	Comparative Law	2
Evolution of Modern Civil Law	2	Legal Philosophy	2
Jurisprudence	2	Present Trend of International Law	2
Law Reform	2	Penology and Criminology ...	1
Legal History, Biography and Literature	2	Statutory Construction	1
Theory and Practice of Legislation	1	Public Service Corporations & Commissions	1
	—	Advanced Philippine Constitutional Law	1
Total	11	Total	10

Thesis 5 units

The grade for the thesis shall be taken into account in computing the general average.

REVIEW COURSE FOR PREPARATION FOR THE BAR EXAMINATIONS

PROFESSOR JOSE A. ESPIRITU

Director

REQUIREMENTS FOR ADMISSION

A Review Course to prepare candidates for the bar examinations is given annually by the College, and will be held this year beginning May 2nd, and ending September 1st, 1932. This course is open to graduates of the College and law colleges and schools which are members of the Association of American Law Schools or which are recognized and approved by the Secretary of Public Instruction, the applicant being otherwise qualified for admission to the bar examinations and able to satisfy the director that he possesses sufficient knowledge of English to take the work to advantage. The fees for admission are ₱50.00 and ₱10.00 for each student for tuition and library fees, respectively, payable in advance. Unless otherwise already made, a deposit of ₱10.00, which may be withdrawn by the applicant at the end of the course, is also required. Registration in this course will be held on April 30th this year.

SUBJECTS FOR REVIEW

MAY-JUNE

1. *MERCANTILE LAW.*

Four hours a week, Professor ESPIRITU.

2. *CIVIL PROCEDURE.*

Five hours a week, Professor LABRADOR.

3. *PRIVATE INTERNATIONAL LAW.*

Two hours a week, Professors REGALA & GARCIA.

4. *POLITICAL LAW.*

Six hours a week for one month, Professor SINCO.

JULY-AUGUST 16

1. *CIVIL LAW.*

Six hours a week, Dean BOCOBO.

2. *CRIMINAL PROCEDURE.*

Two hours a week, Professor LABRADOR.

3. *CRIMES.*

Five hours a week, Professor GUEVARA.

4. *LAND REGISTRATION AND MORTGAGES.*

Three hours a week, Professor ALTAVAS.

AFTER SECOND EXERCISE

Practical exercises.—Two hours to be announced in time, Professor DURAN.

GENERAL INFORMATION

ACADEMIC YEAR

The academic year 1932-1933, will begin on June 6, 1932 and will end on March 21, 1933. Registration will begin on June 1, and will end on June 4, 1932. Classes will begin on June 6. The afternoon classes will be held at 2:00, 3:00, and 4:00 o'clock P. M., and the evening classes at 5:30, 6:30 and 7:30 every working day.

REGISTRATION

For those desiring to matriculate in this College for the first time, the routine for registration and matriculation is as follows: (1) The applicant must apply to the Registrar of the University of the Philippines for permit to take the entrance examination, presenting certificate of the completion of the preparatory law courses. The entrance examinations are generally held in the latter part of May and applications must be filed before the examinations; (2) If the applicant qualifies in the entrance examination (Type B) prescribed for the College of Law, his name will be included in the list to be published by the Registrar. A certified list of those who have qualified will also be furnished the Secretary of the College of Law by the Registrar of the University. (3) During registration those included in the list should confer with the Dean of the College for their subjects, and matriculate in accordance with the prescribed procedure, a description of which is furnished by the Secretary of the College during registration.

Those who graduated with honors or are valedictorians or salutatorians in their pre-legal course and those who are holders of a four-year college degree or higher granted by an institution recognized by the Secretary of Public Instruction are not required to take the entrance examination, and may apply directly to the Registrar of the University for admission during the registration period. All students, new and old, before matriculating should first report to the Dean for their subjects and then follow the usual steps for paying fees, securing class cards, etc.

ATTENDANCE

1. The rules on attendance herein laid down shall be followed in all the schools and colleges including the Department of Military Science and Physical Education.

2. No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean or director of the college concerned; provided, that no student may matriculate in a college or school or enroll in a course later than two weeks after classes begin. A college or school, or department, to meet special conditions, may shorten this period of extension.

3. Any student, who for unavoidable cause, is obliged to absent himself from any college or required university class must obtain an excuse written on U. P. Form 97 from his dean or director to be presented to his instructors.

4. Excuses for absence shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

5. Excuses are for time missed only. All work covered by the the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

6. When the number of hours lost by absence by a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any other scheduled work in one subject for that semester, he shall be

dropped from the class roll with a grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

7. Instructors shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

8. A student shall be given a grade of incomplete in a course if he is absent from the final examination, provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of his dean or director.

9. Any student who drops a course or withdraws from a college or school without the approval of his dean or director shall be subject to curtailment of registration privileges. Prolonged leave of absence must be sought by written petition to the dean or director, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired; provided, however, that students granted leave under this clause shall be subject to the scholarship rules of the college or school where he is duly registered. Indefinite leave of absence shall not be granted.

10. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to his dean or director. If the petition is granted the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall file with the dean or director of this college or school. Without such petition and favorable action no record of honorable dismissal will be made.

11. Attendance in the Graduate School shall be governed by the foregoing rules.

12. Certificates of absences due to illness must be secured from the University physician.

13. Any student who, without permission of the professor, leaves the classroom for the remainder of the hour or stays out for more than 10 minutes, will be marked absent.

14. Obtaining an excuse on misrepresentation shall constitute a serious breach of discipline and appropriate action will be taken accordingly.

15. Monthly reports of absences shall be forwarded to the Dean's office between the 7th and 10th of each month.

16. Shortly before the semester examinations, the Dean will issue to the members of the Faculty a list of students whose grades should be reduced on account of absences, specifying in what course or courses such reductions shall be made. Reductions shall be designated thus: "No," which means that a student cannot take the examination and must repeat the course; "H," heavy; "M," medium; and "L," light. Every professor is also authorized to effect reductions as to students not listed by the Dean.

17. Any student who abandons or refuses to attend his class when there is an order that classes will be held as usual, shall be marked absent and given a grade of zero for that recitation period, by the instructor concerned.

EXTRA-CURRICULAR ACTIVITIES

PHILIPPINE LAW JOURNAL

The college publishes a legal periodical called "The Philippine Law Journal." The aim of the journal is to promote legal research and help advance legal science. The Editor and Business Manager is a member of the permanent faculty. The Managing Editor is assisted by a Student Editorial Board composed of members of the Senior Class who have shown special ability in reporting and reviewing court decisions. The Journal is published monthly from July to March. Besides articles on legal subjects, it contains a review of the recent decisions of the Supreme Court of the Philippine Islands. Subscription to the Journal is required of all students of the college. The subscription rates are: ₱4.00 per annum for students; ₱5.00 per annum for all others.

STUDENTS' ACTIVITIES AND ORGANIZATIONS

The College of Law plays a leading role in the development of college spirit and proper student activities. The different classes are organized. The "Philippine Barristers" meet once a week for practice in public speaking and parliamentary rules, and give two annual public programs. The "Junior Philippine Senate", whose members are selected by reason of scholastic and oratorical attainments, is patterned after the Philippine Senate and is designed to give training in legislation. In both of these organizations, the students use English or Spanish. Practice clubs are organized in the Junior class for the trial of moot-court cases. The College of Law Orchestra plays on University occasions as well as in College of Law programs. The Annual Oratorical Contest, for which Hon. Manuel L. Quezon, President of the Philippine Senate, gives prizes, is an important event in the College. There is also an annual trial in Spanish, to which the public is invited. The Student Council, composed of the heads of the different organizations and representatives from each class, acts in an advisory capacity to the Dean on student affairs. The College participates in the activities of the University Cadet Corps, University Debating Club, University Dramatic Club and in the publication of a University annual. At the end of the second semester, the seniors have a program of activities, such as farewell gathering, class day exercises, athletic games with the faculty and tree planting. The law alumni hold an annual meeting during the commencement week.

PRACTICE COURTS

The purpose of the practice courts, in conjunction with the courses in pleading and practice, is to qualify the student, as far as possible, for the actual practice of his profession upon graduation. During the first year in the course in Elementary Law, instruction is given in finding the law, in legal bibliography, and in the use of decisions and statutes. During the second year in Elementary Procedure, general introductory principles, including the elements of common law pleading and the organization and jurisdiction of the courts of the Islands, are studied; criminal procedure follows, taking up the principles in this branch. During the

third year, civil procedure covers the principles of code pleading, followed by the course in Evidence.

Trial practice and general course in legal ethics and practice come in the senior year. Supplemental to the foregoing, the third year students are given instruction and practice as in justice of the peace courts, and in brief making and the argument and decision of questions of law, before practice clubs sitting as supreme courts, composed of members of the faculty and students. In the senior year every student is required to act as counsel in the preparation and trial of three moot-court cases in which all stages of the proceedings are carried out from the filing of the complaint to the final judgment. At least one case must be carried up on appeal to a supreme court composed of faculty and alumni members. The organization and conduct of the practice courts is under the charge of a member of the faculty assisted by other members of the faculty and by judges and practicing attorneys. The senior practice court is completely organized with a presiding judge, a clerk, and sheriff. In the practice clubs as well as in the senior practice court, English and Spanish are used.

SCHOLARSHIP RULES

It is the purpose of the college to have its work characterized by completeness and thoroughness. Mid-semester "smoke-up" notices are sent to students doing unsatisfactory work. The examinations held at the end of each semester are made comprehensive and searching. The grades of students on their examinations and class records are indicated by the numbers 1, 2, 3, 4, 5, the first three numbers indicating completion of the course, 4 conditionally passed, and 5 not passed. The grade of 4 ordinarily is not given by the Faculty.

The scholarship rules provide as follows:

1. Every student whose class standing in any subject two weeks before the examination period is less than 60 per cent shall be excluded from the examination in said subject and shall be reported with a grade of 5. The instructor in charge of the subject shall notify him at once of his exclusion from the examination.
2. Without the consent of the Dean, no student shall give up any subject after the middle of the semester if his class standing in said subject is poor. Any student violating this rule shall be reported with a grade of 5 at the end of the semester.
3. No student of the College of Law shall, directly or indirectly, ask any person to recommend him to his professor or professors for any grade in his class record, examination paper, or final report of grades. Any student violating this rule shall lose all credit in the subject or subjects regarding which such recommendation is made. The fact that a student is thus recommended shall be prima facie evidence that the recommendation is made at the request of the student concerned.
4. Any student of the College of Law, except those carrying special subjects, not passing at least one-half of the units taken in any semester will be dropped from the rolls. In the computation of the units

which the student has passed or has not passed the grade of 4 shall be counted as a failure.

5. Any student who fails in 25 per cent or more of the units he is taking in any semester shall be placed on probation provided that for the purposes of the scholarship rules, those subjects which do not have any unit shall be considered as having the weight of one half unit each. Any student so placed on probation shall not be eligible to participate in any public activity of the College or of the University; and his registration in the following semester shall be limited by at least one subject, said subject to be selected by the Dean; provided, however, that this rule on limited registration shall not be applied to candidates for graduation.

6. Any student necessary to be placed on probation, for a second successive semester will be dropped from the rolls.

7. Any student who fails in one or more subjects but whose case does not come under the rules on probation or dismissal shall be warned.

8. Freshmen found by the faculty to be deficient at the end of the first semester will be required to pass at least twelve units in the College of Liberal Arts, to be designated by the Dean, before being permitted to enter the College of Law.

9. No student will be recommended for graduation who does not have such number of grades of 1 and 2 as to make his general average 2.75 or better. In the graduate course, a general average (on the basis of hours of credit) of 2.5 is the standard of scholarship necessary for graduation with the degree of Master of Laws.

10. No student will be recommended for graduation who is not reported as having such knowledge of civil law, mercantile law, remedial law, criminal law, private and public international law, political law, land registration, legal ethics, conveyancing and practice (trial practice, evidence and practice court) as should enable him to pass the bar examination without difficulty.

11. With respect to students getting grades of 4 in any subject, the scholarship rules shall be applied during the period of registration for the semester immediately following.

ADMISSION TO THE BAR

The law provides: "Any resident of the Philippine Islands, not subject or citizen of any foreign government, of the age of 21 years, of good moral character, and who possesses the necessary qualifications of learning and ability, is entitled to admission as a member of the Bar of the Islands."

General powers subject to certain limitations are granted the Supreme Court of the Philippines to provide general and special rules for admission. Every year, beginning the third week of August and extending to the second week of September, there is held by the Supreme Court, through a committee of competent lawyers appointed by it, an examination of applicants for admission to the Bar. Applicants who during the period of Spanish sovereignty in the Philippine Islands had been admitted to practice in Philippine Courts or in the Courts of Spain or in any of its dependencies, before admission, are examined in Remedial Law and Political Law.

Those who have been admitted to practice and had been practicing law for a period of at least five years in the Supreme Court of the United States or in any circuit court of appeal, or in the highest court of any state or territory of the United States, which state or territory confers the same privilege on attorneys admitted to practice in the Philippine Islands may, in the discretion of the Court, be admitted without examination. All other applicants are required to take the examinations in the following subjects: civil law; land registration and mortgages, mercantile law; criminal law; political law (constitutional law, public corporations and public officers); international law, both public and private; remedial law (civil procedure, criminal procedure and evidence); legal ethics and practical exercises (in pleading and conveyancing). A minimum grade of 60% in each subject and a general average of 75% is required for qualification.

The rules provided by the Supreme Court further require that before an applicant can be admitted to take the bar examination, he must show that he has attentively and regularly studied law for four years and successfully completed all prescribed courses in a law school or university approved and recognized by the Secretary of Public Instruction. It is also required that before he began the study of law, he had graduated from a government high school or its equivalent. Certificates to this effect together with three testimonials of good moral character must accompany the applicant's application which must be filed with the Supreme Court at least fifteen days before examination.

In connection with the Bar Examinations, the following rule was approved by the faculty of the College of Law on November 9th, 1916:

"Hereafter, no undergraduate in the College of Law shall take the bar examination without express permission from the faculty. Any undergraduate violating this rule shall not be admitted again to the College of Law. The permission herein referred to may be given in exceptional cases only. The Dean is hereby authorized to prepare each year a list of graduates and undergraduates who can take the bar examination. The Dean will then confer with the Justices of the Supreme Court, asking them to admit to the examination only the persons whose names appear in the list."

EXPENSES

TUITION AND OTHER FEES

The following fees in the undergraduate and graduate courses payable at the beginning of each semester are required: Registration fee, ₱5.00; Tuition fee, ₱50.00; Library fee, ₱10.00; Medical fee, ₱2.00; Athletic fee, ₱1.50; Subscription to the Philippine Collegian, ₱1.00 a semester and to the Philippine Law Journal, ₱4.00 per year; to the U. P. Student Council a fee of ₱.50 is collected. Total, ₱74.00.

For less than a full load the following schedule for tuition is in force: (1) thesis or five clock hours of work or less a week, ₱30.00; (2) more than five clock hours of work but not exceeding 10, ₱40.00; (3) more than 10, ₱50.00.

The other fees are: ₱5.00 for late registration and ₱10.00 for each special examination for removal of conditions, except when held on the

dates regularly set for removal or for general examinations. ₱1.00 is also charged for any change in matriculation, and ₱2.00 for unauthorized dropping of any subject.

For the Review Course for preparation for the bar examinations, tuition fee of ₱50.00 and a Library fee of ₱10.00 are charged.

Unless already made, a deposit of ₱10.00 is charged upon entrance in the College of Law plus ₱5.00, as entrance fee, if the applicant is entering the University for the first time. The deposit, not otherwise used to cover losses, may be withdrawn upon graduation or withdrawal from the College.

OTHER EXPENSES

Board and lodging may be obtained in dormitories and private boarding houses around the University Campus from ₱25.00 to ₱50.00 a month, depending on the wishes of the students and their ability to pay. Rooms may be obtained jointly with others at ₱6.00 to ₱12.00 per month.

The expenses for textbooks range from ₱40.00 to ₱80.00 a semester.

PRIZES AND HONORS

For Scholarship (Entire Course): Manresa's Commentaries on the Civil Code and Wigmore on Evidence were for some time offered by an alumnus of the University for first and second prize, respectively, to the two students who, during the entire course, obtained the highest scholastic standing. Upon his demise, the prizes were discontinued. However, the faculty of the College gives recognition every year to the two students who obtain the highest standing during the entire course by declaring them valedictorian and salutatorian, respectively. These honors were given to the following students: 1918, Ramon San Jose, valedictorian; Mariano Ampil, salutatorian; 1919, Cesar Bengzon, valedictorian; Ramon B. Felipe, salutatorian; 1920, Ladislao Yap, valedictorian; Francisco Ventura, salutatorian; 1921, Manuel Lim, valedictorian; Emiliano Remo, salutatorian; 1922, Vicente L. Faenar, valedictorian; Jose B. L. Reyes, salutatorian; 1923, Paulino Ybañez, valedictorian; Vicente de la Cruz, salutatorian; 1924, Domingo Zavalla, valedictorian; Francisco Capistrano, salutatorian; 1925, Rafael Dinglasan, valedictorian; Felicing Tirona, salutatorian; 1926, Pompeyo Diaz, valedictorian; Pedro Albano, salutatorian; 1927, Domingo Guevara, valedictorian; Ezequiel Grageda, salutatorian; 1928, Octavio Maloles, valedictorian, Evaristo Sandoval, salutatorian; 1929, Lorenzo Sumulong, valedictorian, Emilio Abello, salutatorian; 1930, Cermelino Alvenadia, valedictorian, Ramon Diokno, Jr. salutatorian; 1931, Magno Gatmaitan, valedictorian; Alberto Dizon, Salutatorian; 1932, Juan R. Liuag, valedictorian, Ernesto Sibal, salutatorian.

For Scholarship (For Sophomore Students): A prize consisting of an Encyclopedic Law Dictionary was for some time offered by the Callaghan & Co., Law Publishers of Chicago, to the sophomore student who obtained the highest general average during his second year. When this prize was discontinued some years ago, the West Publishing Company of St. Paul began to give as a substitute Black's Law Dictionary. This prize was won by the following students:

1918, Tomas Concepcion; 1919, Roman Ozaeta; 1920, Vicente L. Faelnar; 1921, Paulino Ybañez; 1922, Domingo Zavalla; 1923, Rafael Dinglasan; 1924, Pompeyo Diaz; 1925, Domingo Guevara; 1926, Octavio Maloles; 1927, Lorenzo Sumulong; 1928, Carmelino Alvendia; 1929, Magno Gatmaitan; 1930, Juan R. Liuag; 1931, Lourdes Paredes; 1932, Arturo M. Tolentino

For the Best Thesis (Senior Students): The Lawyer's Cooperative Publishing Company of Rochester, N. Y. has a standing prize, consisting of ten volumes of the United States Supreme Court Digest, for the best thesis.

This prize was won in 1918 by Manuel Gallego; Filix Bautista, honorable mention; in 1919 by Vivencio F. Reyes; Engracio Abasolo, honorable mention; in 1920 by Leoncio Monzon; Bibiano L. Meer and Ladislao Yap, honorable mention; in 1921 by Manuel Lim; Benito Soliven, honorable mention; in 1922 by Crispin Llamado; Leocadio Lalin, honorable mention; in 1923 by Jose Bantungal; Bernardo Farrales, honorable mention; in 1924 by Jose Bonto; Estela Romualdez, honorable mention; in 1925 by Felicing Tirona; Eudacio Cacho, honorable mention; in 1929 by Pedro Maldia; Honesto Bausa, honorable mention; in 1930 by Ramon Diokno, Jr.; Wenceslao Mabasa, honorable mention; in 1931 by Rosario Esquivel; Francisco Ortigas, Jr., honorable mention; 1932 by Apolonio Santiago.

For Excellence in Oratory: Every year there is held by the College a contest for excellence in oratory, in which gold and silver medals are given as first and second prizes. These prizes were:

The Carson Medals for Excellence in Oratory—Given by Mr. Adam C. Carson, formerly Associate Justice of the Supreme Court, until 1919. These prizes were won, respectively, in 1913 by Eulogio Benitez, first; Victoriano Yamzon, second; in 1914 by Juan L. Luna, first; Elpidio Quirino, second; in 1915 by Marceliano Montemayor, first; Paulino Gullas, second; in 1916 by Jose P. Melencio, first; Jesus de la Rama, second; in 1917 by Alejo Labrodor, first; Emilio M. Javier, second; in 1918 by Bibiano Meer, first; Mariano Ampil, second; in 1919 by Dionisio de Leon, first; Ramon B. Felipe, second.

The Hervas Medals for Excellence in Oratory—Given by Mr. Eliseo Hervas, formerly Editor of the "Ideal". These prizes were won by Vicente G. Sinco, first; Pio Duran, second.

The Quezon Medals for Excellence in Oratory—Given annually since 1921 by Hon. Manuel L. Quezon, President of the Philippine Senate. The prizes were won, respectively, by the following students:

1921, Benito Soliven, first; Capriano Navarro, second; 1922, Jose E. Romero, first; Lorenzo Tañada, second; 1923, Simon Santos, first; Juan S. Reyes, second; 1924, Gerardo Florendo, first; Jose A. Uy, second; 1925, Martin Dolorico, first; Felicing Tirona, second; 1926, Lamberto Macias, first; Deogracias Puyat, second; 1927, Jacinto Borja, first; Pedro Camus, second; 1928, Macario Zamuco, first; Juan C. Pajo, second; 1929, Felismeno Rivera, first; Magno Gatmaitan, second; 1930, Sulpicio Guevara, first; Emerito M. Ramos, second; 1931, Salvador V. Esguerra, first; Ale-

jandro Sebastian, second; 1932, Wenceslao Vinzons, first; Hilarion U. Jarencio, second.

Malcolm Prizes: Mr. George C. Malcolm, Associate Justice of the Supreme Court, gave first and second prizes, consisting of Manresa's Commentaries on the Civil Code and Wigmore on Evidence, respectively, for the two best theses submitted in connection with the course in Legal Ethics. These prizes were won by the following students: 1924, first, Roberto Regala; second, Gerardo Florendo; 1925, first, Felicing Tirona; second, Conrado Paras.

THURSDAY ASSEMBLY

The College of Law Convocation held at the Faculty Hall in the afternoon of every other Thursday has become an institution. In this convocation, the student body is given an opportunity to listen to addresses from distinguished leaders of the country in politics, in the professions, in arts and sciences and in business. Visitors coming from abroad are also invited to speak.

MEDICAL DEPARTMENT INFIRMARY

The University Infirmary has a staff of four physicians and three nurses, and conducts a dispensary solely for the care of students. This dispensary is open from 8 to 10 and from 11 to 12 noon, and from 4 to 6 P.M. on all school days. If a student is sick and is unable to come to the dispensary for treatment, he will be entitled to request one of the attending physicians of the infirmary to visit him in his home or dormitory. If he is confined in another hospital, the physicians of the University Infirmary will be available if he so desire. Post-operative cases from other hospitals may be transferred to the Infirmary, if those cases have been operated on by one of the members of the Infirmary staff.

All cases are admitted to the Infirmary, except major surgical cases. But contagious and infectious diseases like typhoid, dysentery, diphtheria, and eruptive fevers are not admitted.

There is a medical examination at the beginning of each school year and periodic physical examination during the year. The purpose of these examinations is to find out physical defects and errors of habits of students and to give them proper advice or treatment. The periodic examination is made from 10 to 11 A. M. and from 2 to 4 P. M. on all school days.

A physician is detailed for a 24-hour service to attend to all calls.

The University Infirmary conducts a periodic inspection of boarding houses where students live, and gives prophylactic inoculations against typhoid, cholera, and smallpox. It also gives courses on personal and community hygiene to all freshmen except first year medicine.

The University Infirmary also performs medical examination for the issuance of students' certificates of absences from classes, and for recommendation for exemption from military science on the ground of physical disability.

Medicines for common illness are given free, but expensive medicines such as those used for injection including patent medicines are to be bought by the students.

The fee for this service is ₦2 a semester.

STUDENT LOAN FUND

A limited fund is available for loans to deserving students who cannot, for lack of means, pay in advance the regular tuition and other University fees. To be entitled to the benefits of this fund, the student must have records distinct and above the average of his class and be recommended by his adviser and the dean. Loans bear interest at the rate of six per cent per annum.

Applications for loans must be made on University form provided for the purpose, and filed with the Loan Board, composed of the Secretary-Treasurer, the Comptroller, the Dean of Men and the Registrar. No loans are granted for a longer period than one year.

The College of Medicine

ADMINISTRATIVE OFFICERS

RAFAEL PALMA, A.B., LL.B., LL.D., *President of the University.*

OFFICE OF THE DEAN OF THE COLLEGE

FERNANDO CALDERON, A.B., M.D., *Dean.*¹

SIXTO DE LOS ANGELES, A.B., L.M., *Acting Dean.*

JOSE ALBERT, A.B., M.D., *Chief of Clinics.*

DANIEL DE LA PAZ, M.D. *Secretary.*

PEDRO M. CHANCO, *Chief Clerk and Superintendent of City Morgue.*

OFFICE OF THE DIRECTOR OF THE SCHOOL OF PHARMACY

MARIANO V. DEL ROSARIO, A.B., M.S., Phar.D., *Director.*

PATROCINIO VALENZUELA, A.B., Ph.G., B.S.(Phar.), Phar.D., Ph.D.,
Secretary.

HEADS OF DEPARTMENTS IN MEDICINE IN THE COLLEGE OF MEDICINE

Anatomy (Tel. 54131): Dr. ARTURO GARCIA.

Gynecology (Tel. 56991 Local 1): Dr. FERNANDO CALDERON.

Hygiene (Tel. 56406): Dr. HILARIO LARA.

Legal Medicine (Tel. 54136): Dr. SIXTO DE LOS ANGELES.

Medicine (Tel. 56991, Local 25): Dr. LUIS GUERRERO.

Obstetrics (Tel. 56991, Local 37): Dr. BALDOMERO ROXAS.

Ophthalmology and Otolaryngology (Tel. 56991, Local 35): Dr. ARISTEO
R. UBALDO.

Pathology and Bacteriology (Tel. 54117): Dr. LIBORIO GOMEZ.

Pediatrics (Tel. 56991, Local 31): Dr. JOSE ALBERT.

Pharmacology (Tel. 54232): Dr. DANIEL DE LA PAZ.

Physiology. (Tel. 54132): Dr. ISABELO CONCEPCION.

Surgery (Tel. 56991, Local 36): Dr. JOSE EDUQUE.

CHAIRMEN OF STANDING COMMITTEES OF THE COLLEGE OF MEDICINE

Admission: Dr. DANIEL DE LA PAZ; Tel. 54232.

Standing and Promotion:

For first and second year students: Dr. ISABELO CONCEPCION;
Tel. 54132.

For third, fourth, and fifth year students: Dr. JOSE EDUQUE; Tel.
56991, Local 36.

¹ On special detail abroad.

Catalogue and Curriculum: Dr. JOSE ALBERT; Tel. 56991, Local 7.

Library: Dr. JOSE ALBERT; Tel. 56991, Local 7.

Student Welfare: Dr. MARIA PAZ MENDOZA-GUAZON: Tel. 54117.

BUSINESS DIRECTORY

OFFICE OF THE DEAN: The office of the Dean is located in Room No. 1 on the first floor of the College building on 547 Calle Herran, Ermita. Office hours by appointment.

TELEPHONE CONNECTIONS: The Dean's office may be reached from outside by Tel. 54221.

The Laboratory Departments may be reached only during business hours 8-12 and 1-4. The Clinical Departments are on the local exchange of the Philippine General Hospital. From outside call Tel. 56991 (The Hospital number and ask for department wanted or give local number shown above.)

CORRESPONDENCE: Address all correspondence to the Dean, College of Medicine, University of the Philippines, Manila, P. I.

THE FACULTY OF INSTRUCTION

FERNANDO CALDERON, A.B., M.D.,

Dean of the College, and Professor and Head of the Department of Gynecology.

JOSE ALBERT, A.B., M.D.,

Professor and Head of the Department of Pediatrics, and Chief of Clinics.

SIXTO DE LOS ANGELES, A.B., L.M.,

Professor and Head of the Department of Legal Medicine, Medical Economics, and Ethics.

EMILIO BULATAO, M.D.

Professor of Physiology.

ISABELO CONCEPCION, M.D.,

Professor and Head of the Department of Physiology and Biochemistry.

JOSE EDUQUE, M.D.,

Professor and Head of the Department of Surgery.

ARTURO GARCIA, A.B., M.D.,

Professor and Head of the Department of Anatomy.

FAUSTINO GARCIA, M.D.,

Professor of Pharmacology.

LIBORIO GOMEZ, M.D., Ph.D.,

Professor and Head of the Department of Pathology and Bacteriology.

LUIS GUERRERO, A.B., M.D.,

Professor and Head of the Department of Medicine.

HILARIO LARA, M.D., C.P.H., Dr. P.H.,

Professor of Hygiene and Preventive Medicine, Head, Department of Epidemiology, Statistics, and Public Health Administration, and Secretary, School of Hygiene and Public Health; Head, Department of Hygiene and Parasitology, College of Medicine.

WALFRIDO DE LEON, A.B., M.D., D.T.M.,

Professor of Pathology and Bacteriology, Head, Department of Sanitary Bacteriology and Immunology, School of Hygiene and Public Health, and Chief, Department of Laboratories, Philippine General Hospital.

MARIA PAZ MENDOZA-GUAZON, M.D., D.T.M.,

Professor of Pathology and Bacteriology.

JUAN C. NAÑAGAS, M.D.,

Professor of Anatomy.

DANIEL DE LA PAZ, M.D.,

Professor and Head of the Department of Pharmacology.

CARMELO M. REYES, M.D.,

Professor of Surgery and Gynecology.

BALDOMERO ROXAS, A.B., M.D.,

Professor and Head of the Department of Obstetrics.

ANTONIO G. SISON, A.B., A.M., M.D.,

Professor of Medicine.

ARISTEO R. UBALDO, A.B., L.M.,

Professor and Head of the Department of Ophthalmology, Otology, Rhinology, and Laryngology.

HONORIA ACOSTA-SISON, M.D.,

Associate Professor of Obstetrics.

MIGUEL CAÑIZARES, A.B., M.D.,

Associate Professor of Anatomy.

AMPARO CONCHA-BRILLANTES, M.D.,

Associate Professor of Hygiene, School of Hygiene and Public Health.

RICARDO FERNANDEZ, A.B., M.D.,

Associate Professor of Physical Therapy.

ROMULO GUEVARA, M.D.,

Associate Professor of Pharmacology.

PERPETUO GUTIERREZ, M.D.,

Associate Professor of Dermatology and Syphilology.

LAMBERTO LEIVA, M.D., D.T.M.,

Associate Professor of Parasitology, School of Hygiene and Public Health.

CARLOS MONSERRAT, A.B., M.D.,

Associate Professor of Pathology and Bacteriology.

MARIANO TOLENTINO, M.D.,

Associate Professor of Gynecology.

ANTONIO D. VAZQUEZ, M.D., B.S.,

Associate Professor of Surgery.

HERMINIO VELARDE, M.D.,

Associate Professor of Ophthalmology, Otology, Rhinology and Laryngology.

CANDIDO M. AFRICA, M.D., D.T.M. & H.,

Assistant Professor of Parasitology and Acting Head, Department of Parasitology, School of Hygiene and Public Health.

NARCISO CORDERO, M.D.,

Assistant Professor of Physiology.

FIDEL CUAJUNCO, M.D.,

Assistant Professor of Anatomy.

ELIAS DOMINGO, M.D.,

Assistant Professor of Neurology and Psychiatry.

JANUARIO ESTRADA, M.D.,

Assistant Professor of Surgery.

ANTONIO S. FERNANDO, A.B., M.D.,

Assistant Professor of Ophthalmology, Otology, Rhinology and Laryngology.

PABLO I. DE JESUS, M.D., Dr. P.H.,

Assistant Professor of Hygiene, and Acting Head, Department of Sanitary Engineering, Industrial Physiology and Chemistry, School of Hygiene and Public Health.

PEDRO T. LANTIN, M.D., D.T.M.,

Assistant Professor of Medicine.

- MARCIANO LIMSON, M.D.,
Assistant Professor of Anatomy.
- ANICETO Y. MANDANAS, M.D.,
Assistant Professor of Surgery.
- REGINO J. NAVARRO, A.B., M.D.,
Assistant Professor of Pathology and Bacteriology.
- WENCESLAO PASCUAL, M.D.,
Assistant Professor of Physiology.
- GUILLERMO RUSTIA, A.B., L.M.,
Assistant Professor of Obstetrics.
- JUAN Z. SANTA CRUZ, A.B., M.D.,
Assistant Professor of Pathology.
- ALBERTO TUPAS, M.D.,
Assistant Professor of Pediatrics.
- ANTONIO VILLARAMA, M.D.,
Assistant Professor of Obstetrics.
- ANASTACIA VILLEGAS, A.B., M.D.,
Assistant Professor of Legal Medicine, Medical Economics and Ethics.
- WENCESLAO VITUG, M.D.,
Assistant Professor of Medicine.
- MOISES B. ABAD, A.B., M.D.,
Instructor in Pediatrics and Senior Resident.
- JOSE I. ABUEL, M.D.,
Instructor in Surgery (Non-Resident).
- VIVENCIO ALCANTARA, A.B., M.D.,
*Instructor in Ophthalmology, Otology, Rhinology and Laryngology
(Non-Resident).*
- PABLO ANZURES, M.D.,
Instructor in Legal Medicine.
- CONRADO AYUYAO, M.D.,
*Instructor in Ophthalmology, Otology, Rhinology and Laryngology
and Senior Resident.*
- ALFREDO BAENS, M.D.,
Instructor in Obstetrics and Senior Resident.
- BENJAMIN BARRERA, M.D.,
Instructor in Pathology and Bacteriology.
- JOSE N. DUALAN, M.D.,
Instructor in Anatomy.
- JOSE ENCARNACION, M.D.,
Instructor in Anatomy.
- CECILIO D. FRANCO, M.D.,
Instructor in Surgery and Gynecology (Non-Resident).
- TOMAS GAN, M.D.,
Instructor in Hygiene, School of Hygiene and Public Health.
- PATRICIO IGNACIO, A.B., M.D.,
Instructor in Medicine and Senior Resident.
- FELIZA DE JESUS, M.D.,
Instructor in Physical Therapy (Non-Resident).

GREGORIO T. LANTIN, M.D.,

Instructor in Hygiene, School of Hygiene and Public Health.

GERONIMO MANAHAN, M.D.,

Instructor in Anatomy.

ALBINO N. OCAMPO, A.B., M.D.,

Instructor in Pediatrics (Non-Resident).

MARIANO OCAMPO, A.B., B.S.(Chem.), M.S.,

Instructor in Biochemistry.

LAURO H. PANGANIBAN, M.D.,

Instructor in Pharmacology.

ALFREDO PIO DE RODA,¹ M.D.,

Instructor in Sanitary Bacteriology and Immunology, School of Hygiene and Public Health.

PEDRO G. REYES, M.D.,

Instructor in Anatomy.

JUAN SALCEDO, Jr. M.D.,

Instructor in Physiology.

PASTOR R. SAPINOSO, B.S., M.D.,

Instructor in Pathology and Bacteriology.

AGERICO B. M. SISON, A.B., M.D.,

Instructor in Medicine (Non-Resident).

ANDRES T. ZAVALLA, A.B., M.D.,

Instructor in Surgery and Senior Resident.

ANANIAS L. CHAVEZ, M.D.,

Assistant in Medicine and Junior Resident.

FERNANDO BARICAN, M.D.,

Assistant in Obstetrics and Assistant Resident.

SOLOMON BRUNO, Ph.C.,

Assistant in Pharmacology.

FLORENTINO BUENDIA, A.B., M.D.,

Assistant in Ophthalmology, Otolaryngology, Rhinology and Laryngology and Associate Resident.

VICENTE J. CAPISTRANO, M.D.,

Assistant in Surgery and Assistant Resident.

EUGENIO CARLOS, M.D.,

Assistant in Medicine and Assistant Resident.

GUILLERMO ILANO, M.D.,

Assistant in Medicine and Assistant Resident.

JUAN GALANG, M.D.,

Assistant in Obstetrics and Junior Resident.

FORTUNATO S. GUERRERO, M.D.,

Assistant in Surgery and Associate Resident.

JOSE HIZON, A.B., M.D.,

Assistant in Medicine and Associate Resident.

TOMAS R. ILANO, M.D.,

Assistant in Ophthalmology, Otolaryngology, Rhinology and Laryngology and Junior Resident.

¹ On fellowship leave. Place temporarily occupied by Dr. Rogelio Relova.

- CARMELO P. JACINTO, M.D.,
Assistant in Medicine and Assistant Resident.
- JAIME LAICO, M.D.,
Assistant in Surgery and Assistant Resident.
- EDUARDO M. LESACA, M.D.,
Assistant in Surgery and Junior Resident.
- VICENTE LIMSON, PH.C.,
Assistant in Biochemistry.
- CESAR MALOLES, M.D.,
Assistant in Ophthalmology, Otology, Rhinology and Laryngology and Assistant Resident.
- JOSE MANAHAN, M.D.,
Assistant in Obstetrics and Assistant Resident.
- DELFIN ORDOÑEZ, M.D.,
Assistant in Surgery and Assistant Resident.
- JULIAN PAGUYO, M.D.,
Assistant in Pediatrics and Assistant Resident.
- PEREGRINO H. PAULINO, M.D.,
Assistant in Pediatrics and Associate Resident.
- VICENTE POBLETE, M.D.,
Assistant in Obstetrics and Associate Resident.
- FLORENCIO N. QUINTOS, M.D.,
Assistant in Pediatrics and Junior Resident.
- JOSE R. REYES, M.D.,
Assistant in Surgery and Assistant Resident.
- DELFIN D. SAMSON, PH.C.,
Assistant in Biochemistry.
- PATROCINIO SEVILLA, PH.C., B.S., (Phar.), Phar.D.,
Assistant in Pathology and Bacteriology.
- SOTERA U. TOMANENG, M.D.,
Associate Non-Resident in Physical Therapy.
- CATALINO GAVINO, M.D.,
Professorial Lecturer on Infectious Diseases.
- GABRIEL A. BERNARDO, A.B., G.L.S., B.S.L.S., M.A.,
Lecturer on Library Methods.

THE COLLEGE OF MEDICINE¹

HISTORICAL SKETCH

The College of Medicine is an outgrowth of the educational system instituted throughout these Islands by the Philippine Commission, and it is also a natural development of the Bureau of Science and the Bureau of Health.

The movement looking toward the establishment of such a school had its origin at the Second Annual Meeting of the Philippine Islands Medical Association in 1905, at which meeting the proceedings demonstrated the great need of supplying physicians to the people of these Islands: Statistics showed that there was one physician to each 21,209 of the population of the Archipelago, or to each 430 square miles of territory.

The Philippine Medical School was established by the Philippine Commission as the first department of the future University of the Philippines and was opened for the instruction of students June 10, 1907.

The Philippine Medical School was founded in accordance with the following Act:

Act No. 1415.—An Act establishing a Medical School and defining the manner in which it shall be controlled and conducted

By authority of the United States, be it enacted by the Philippine Commission, that:

SECTION 1. There is hereby established in the City of Manila a medical school for the purpose of giving instruction to qualified students. It shall be known as the Philippine Medical School.

The school is hereby made a body corporate, but shall be reincorporated under the new corporation law as soon as the same is enacted.

SEC. 2. The powers of the corporation until reincorporated as above provided are hereby vested in a body to be known as "the board of control of the Philippine Medical School" which shall consist of the Secretary of Public Instruction, the Secretary of the Interior, one member of the Philippine Commission, and one other member to be designated by the Governor-General. The Dean of the faculty of the school, after the establishment of said faculty, also shall be a member of the board of control.

SEC. 3. The board of control shall have the following powers:

(a) To receive endowments and bequests and to provide for their investment and disbursement according to the conditions of the endowment or bequest.

(b) To fix the matriculation fee, the graduation fee, and fees for laboratory courses.

(c) To receive and appropriate for the ends specified by law such sums as may be provided for the support of the school by legislation of the Philippine Commission.

(d) To recommend to the Governor-General, for appointment, the faculty of the school and fix the duties and responsibilities of its members, subject to the provisions of this Act.

(e) To confer the degree of Doctor of Medicine upon such persons as are recommended by the faculty.

(f) To make to the Philippine Commission recommendations in regard to the school and to present estimates of appropriations necessary for its maintenance.

(g) To make all necessary by-laws.

SEC. 4. Upon request of the board of control, heads of Bureaus and Offices of the Insular Government are authorized to loan such apparatus and supplies as may be required and to detail employees for duty in the Medical School, and employees so designated shall perform such duty and the time so employed shall count as part of their prescribed service to the Government. Bureaus and Offices loaning supplies to the Medical School shall, if the same are expended by the school, be reimbursed from the appropriation against which the expenses of the Medical School are a proper charge.

SEC. 5 The public good requiring the speedy enactment of this bill, the passage of the same is hereby expedited in accordance with section two of "An Act prescribing the order of procedure by the Commission in the enactment of laws," passed September twenty-sixth, nineteen hundred.

This Act shall take effect on its passage.

Enacted, December 1, 1905.

¹ The authorities reserve the right of addition to, subtraction from, and modification of the announcements of this catalogue as they may deem necessary for the best interest of the school and students.

The Philippine Medical School became a college of the University of the Philippines, and its name was changed to the "College of Medicine and Surgery," by section 6, paragraph (b), of Act No. 1870, which, as amended by Act No. 2024, reads as follows:

To provide for the establishment of a College of Liberal Arts; a College of Law, a College of Social and Political Science; a College of Medicine and Surgery; a College of Pharmacy; a College of Dentistry; a College of Veterinary Science; a College of Engineering; a College of Mines; a College of Agriculture; and a School of Fine Arts; and Colleges which the Legislature may provide for by appropriation: *Provided*, That the Board of Regents may establish these colleges or any of them as soon as in its judgments conditions shall favor their opening and fund shall be available for their maintenance: *And provided further*, That the Board of Regents, by and with the approval of the Governor-General, shall have the power to combine two or more of the colleges authorized by this Act, in the interest of economy and efficiency: *And provided, further*, That the Philippine Medical School, as established by Act Numbered Fourteen hundred and fifteen, as amended, shall become the College of Medicine and Surgery of the Philippine University as soon as two or more colleges of the University of the Philippines shall have been established and in actual operation.

On December 8, 1910, the provisions of Act No. 1870 having been complied with, the control and management of the school passed to the Board of Regents, and in accordance with said Act the name was changed to "College of Medicine and Surgery" which, on March 1, 1923, was changed to "College of Medicine."

THE HOSPITAL AND COLLEGE BUILDINGS

In the year 1908 the Philippine Commission appropriated the sum of ₱780,000 for the construction of a modern hospital of reinforced concrete, planned on the pavilion system, to accommodate 350 patients. Additional wards can be added in the future, the final capacity being 1,500 patients. This institution, known as the Philippine General Hospital, was opened to the public on September 1, 1910. At present it has a capacity of 648 beds.

At the time of providing for the hospital the Philippine Commission set aside the sum of ₱250,000 for a Medical School Building, to be erected on the same campus as the Bureau of Science and the hospital. This building was completed and opened for class work and instruction on July 1, 1910. It is a modern reinforced concrete structure with a total frontage of 68.54 meters, embracing a main entrance flanked by general offices and faculty room, 18.40 meters wide, and two wings of 25.07 meters each. The center and the wings are 50 and 15 meters respectively.

On the ground floor are the general office, main corridor or lobby, media kitchen, storeroom, autopsy room, cold storage for bodies; the general laboratory of pathology and bacteriology, laboratories for the staff and the chief of the department; the laboratory of legal medicine and the pathological museum.

On the second floor are located the laboratory of histology and embryology, the anatomical library and museums, the private laboratories of the staff and the chief of the department of anatomy; the laboratory of pharmacology, an operating room for animals, storeroom for chemicals and drugs and the offices of the members of the staff of the department; two general lecture rooms and an amphitheater equipped with a reflectoscope. Each lecture room has a seating capacity of about sixty students; that of the amphitheater is about one hundred and twenty.

The third floor of the building is given over to the department of anatomy. It is divided into four dissection rooms, a preparation room, and a private laboratory. All these floors are equipped with modern wash and toilet rooms.

The Board of Regents voted ₱200,000 on June 11, 1926, for the construction of an annex to the present building of the College of Medicine. This annex was completed and opened for class work and instruction on June 15, 1928. In this annex are housed the School of Pharmacy and the Departments of Hygiene, Parasitology, Physiology, and Biochemistry.

The city morgue is located in the College of Medicine building. All autopsies are performed by the Department of Pathology. The material in nearly all cases is available for study by the students.

Animal houses are located on the same campus at the College of Medicine. One of these houses is provided with all modern facilities for experimental surgery.

CLINICAL FACILITIES

The free beds of the Philippine General Hospital and the clinical material of its free dispensary are under the professional control of the College of Medicine. Clinical instruction in dangerous communicable diseases, such as smallpox, diphtheria, plague, cholera, etc., is given in the wards for infectious diseases of the San Lazaro Hospital. The Gota de Leche, an institution for the feeding and care of abnormal and underdeveloped children, and the hospital and the free dispensaries of the Antituberculosis Society in the City of Manila are available for teaching purposes.

The Philippine General Hospital is a large, modern, concrete, well-equipped pavilion hospital of about 650 beds for the care of acute and curable chronic diseases. Of these beds, approximately 500 are for free patients and are available for the instruction of students. The Dean of the College is the Director of the Hospital, and the Assistant Director is also a member of the Faculty of the College. The hospital is administered under the Department of the Interior and has its own appropriation which is entirely under the control of the Director of the hospital, but the departmental personnel of the College and the hospital are practically identical, the heads and the other members of the clinical staff of the College holding corresponding positions on the staff of the hospital. The Philippine General Hospital and the College of Medicine are, therefore, practically one and the same institution.

The large number of patients visiting the various clinics at the free dispensary of the hospital offers excellent opportunities for dispensary teaching and also for supplying the hospital with clinical material for instruction. During the year 1930, 65,995 patients were treated in the dispensary, making 151,732 visits divided among the various services as follows: general medicine including nervous diseases, 23,449; general surgery, 59,621; diseases of the eye, ear, nose, and throat, 38,689; dermatology, 2,540; gynecology, 3,769; obstetrics, 1,293; tuberculosis, 1,147; venereal diseases, 1,983; urology, 1,357; pediatrics, 9,486; and dental cases, 14,398. An average of 506 patients are attended at the dispensary daily.

LIBRARY FACILITIES

The library of the Bureau of Science is open to the students of the College of Medicine. This library consisting of more than 72,000 bound volumes and more than 54,000 pamphlets, is particularly rich in literature on medicine and the allied sciences, and includes complete files of the more important medical journals and society publications. The library contains sets, of all series of Index Medicus, Quarterly Cumulative Index, Quarterly Cumulative Index Medicus, Abstracts of Bacteriology, Physiological Abstracts, Tropical diseases bulletin, Index of the Periodica Dental Literature, Medical Science Abstracts and Reviews and the Index Catalogue of the United States Surgeon-General's Office.

MICROSCOPES AND LABORATORY APPARATUS

The college is equipped with a sufficient supply of microscopes and other clinical and laboratory apparatus for the use of the students. However, owing to the constant use that is made of microscopes throughout the medical courses, each student should have a microscope for his own use, and it is recommended that he purchase one. The students must return the microscopes in good condition, otherwise they will be charged for repairs.

FEES AND DEPOSIT

The tuition fee in the College of Medicine leading to the degree of Doctor of Medicine is P50 a semester. In addition, every new student admitted to this college is required to make a deposit of P20 to cover breakage or loss of any University property given him during his residence in this college. An entrance fee of P5 is also charged. Medical students are also required to pay the usual laboratory and miscellaneous fees every semester. All in all the fees charged in this college by semester are as follows:—

<i>Year</i>	<i>1st semester</i>	<i>2nd semester</i>
First	P140.00	P80.00
Second	100.00	80.00
Third	80.00	60.00
Fourth	80.00	70.00
Fifth or Internship.....	P135.00 for the whole year.	

In case a student does not carry full load, his tuition fee a semester will be computed thus: (1) Thesis or five clock hours of work a week, P30; (2) more than five but not exceeding 10, P40; more than 10, P50.

ADMISSION TO THE FIRST-YEAR CLASS

Applications for admission to the first-year class of the College of Medicine may be made either to the Dean of the College or to the Registrar of the University on or before April 15 of each year. Applicants taking summer courses in the College of Liberal Arts of this University must also make their applications at the same time, stating therein the subjects they are taking in the Summer School. The applications must be accompanied by a certified copy of the applicants' credentials which must include the following:

(a) Satisfactory completion of a standard four-year-high-school course or its equivalent.

(b) Satisfactory completion of the two-year preparatory medicine course as given in the College of Liberal Arts of this University or its equivalent. This preparatory course must consist of at least sixty semester hours of work distributed as follows:

English Composition and Literature.—The usual introductory college course of six-semester hours, or its equivalent is required.

German or French.—A reading knowledge of either one of these languages is required. The ground covering in collegiate courses of at least twelve-semester hours represents the training considered necessary to meet this requirement.

Physics.—Eight-semester hours are required of which at least two must be laboratory work

Chemistry.—Twelve semester hours are required, of which at least eight-semester hours must be in general inorganic chemistry, including four-semester hours of laboratory work and four-semester hours in organic chemistry, including two-semester hour of laboratory work. Work in qualitative analysis may be counted as general inorganic chemistry.

Biology.—Eight-semester hours are required, of which four must consist of laboratory work. The requirement may be satisfied by a course of eight-semester hours in either general biology or zoology, or by courses of four-semester hours each in zoology, and botany, but not by botany alone.

Each applicant must, unless exempted, take an entrance test (Type B) required of all students seeking entrance to the College of Medicine as announced from year to year.

The following students are exempted from entrance examination:

1. Students taking the combined arts medicine course in the University of the Philippines.

2. Graduates possessing the degree of Bachelor of Science major in Biology from any college or university authorized by the Secretary of Public Instruction.

(c) Students coming from foreign countries are exempted from entrance examination, provided (1) that they satisfy all the other entrance requirements of the College and (2) that their connection with this institution shall immediately terminate should their work in the first semester of their residence be unsatisfactory.

ADMISSION TO ADVANCE STANDING

To enter any course a student must have completed the required courses of study which supply the preliminary preparation for that course. The prerequisite courses will be determined by the heads of departments.

Students who have taken, in colleges of liberal arts recognized by this University, courses fully equivalent to the similar courses offered in this College and produce certificates of this fact, need not repeat such courses here. But credits allowed for such work do not entitle the student to advanced time standing.

Students from accredited colleges of medicine may be admitted to advanced standing under the following rules:

(a) They must have passed the type B entrance examination and must present evidence that they have met in some other University the equivalent of the requirements for admission to this college and they must have completed satisfactorily all courses of the same scope and extent as the courses for which they seek advance credit.

(b) They must present credentials including honorable dismissal, but not later than July 15, from the registrar or corresponding officer of the college of medicine from which they come, showing that they have been registered medical students in residence for the time for which credit is sought.

(c) In order to obtain credit for a whole or any part of a course, the student must file with the Dean, before the opening of the college year, an application in duplicate, showing where the work was done, the names of the professors, dates of the beginning and the end of the course, the number of hours per week and weeks in the course, the total number of lectures or recitations, or laboratory or clinical work, and the grades received. This application should be accompanied by certificates, supporting the above facts, from the registrar of the college or the professor under whom the work was done, by the catalogue or schedule of the institution, and by the notebooks of the students in laboratory courses. In the absence of satisfactory certificate, an examination may be required covering the whole or any necessary part of the subject. This application, with its supporting evidence, is submitted to the heads of the departments concerned who decide what credits are recommended.

After the award of the advanced credit, the application will be sent to the Registrar of the University for record and file.

(d) Any course or part of a course required by this College which has not been sufficiently covered by the previous work of the student, must be taken in a manner satisfactory to the professors in charge of the department affected.

A graduate from an approved college of medicine may obtain a diploma from this college under the following conditions only:

(a) He must comply with the requirements for admission to this college. submit full data as outline above, Rule (c), of the preceding paragraph.

(b) He must remain in residence at this college one college year, taking all such courses as are not covered by the subject credits and repeating such courses as the faculty may require. After these demands are satisfied he may elect such additional course as he chooses.

(c) The total of all works taken in this college must not be less than that required of the fifth year class.

(d) He must pass examination in all courses in which he was found deficient and he must conform to all other requirements for graduation exacted of the regular students of this college.

SPECIAL STUDENTS

Persons of requisite age may be admitted to courses in the College of Medicine as special students not candidates for a degree by the faculty of the College of Medicine. Such applicants must be recommended by the College Committee on Admissions and by the chief of the department, in which they desire to take a large part of their work, to the faculty of the College of Medicine. Special students will receive no credit in this University for any work done during the time they are classified as special students.

GRADUATE STUDENTS

Candidates for the degree of Master of Science may take their major subjects in the College of Medicine.

ATTENDANCE

Students must be in actual attendance in the College within the first week of each annual session and thereafter, except in exceptional cases to be dealt with by the Dean on recommendation of the Committee on Standing and Promotion.

Leave to be absent or an excuse for absence does not, in any case, absolve the student from doing the work covered by his class during his absence, to the satisfaction of the instructor in charge.

Students who discontinue any of their work without formal leave of absence do so at the risk of having their registration privileges curtailed or entirely withdrawn.

EXAMINATIONS

Examinations will be held at the end of each semester, upon the completion of each subject.

For the removal of conditions, students shall have the privilege of taking one examination during the first week of June or during the first 10 days of January without the payment of a fee. Examinations may be held at other times only by special permission of the Committee on Catalogue and Curriculum and the Head of the Department concerned and on payment of ₱10. All conditions must be made up within one year.

Students who have been absent from the regular examination may, at the discretion of the Dean and the heads of the departments concerned, be admitted to subsequent examination in such work; but will be required to pay the fee for special examination.

PROMOTIONS, CONDITIONS, FAILURES, AND WITHDRAWALS OF STUDENTS

1. The satisfactory completion of a course shall be determined by the professor in charge, through records of attendance, daily work of the student, examinations and other tests as he may employ. To pass in a course the students of the first, second, third and fourth year classes must satisfy the legal minimum of (a) attendance of at least 80 per cent of the scheduled lectures, recitations, quizzes, laboratory periods, and clinical or other appointments in the course; and (b) at least a grade of "3".

The interns or 5th year students will be required to serve satisfactorily for at least 120 days in medicine, 90 days in surgery, 28 days in gynecology, 28 days in obstetrics, 28 days in pediatrics, 28 days in clinical pathology, and 28 days in ophthalmology and oto-laryngology. Absence for justified reason to be determined by the heads of departments concerned may be excused, but in every case the student shall be required to make up the deficiency. He can not be recommended for graduation before such deficiency is made up.

2. A regularly enrolled medical student, who has not received a condition or failure in any of the subjects of the prescribed course taken during the academic year, or who has removed all conditions before the beginning of the following academic year, will be advanced to and enrolled in the next higher class.

3. A student with a failure in any laboratory subjects will not be admitted to any course in the clinical subjects although he may be allowed to register in laboratory courses provided that there is no conflict in prerequisites.

4. A grade of "4" shall indicate that the student receiving such grade is conditioned in the subject in which the mark was received. He may be given a reexamination in the subject matter of the course, or be required to do additional work or both, at the discretion of the instructor in charge.

5. The grade of "3" is the highest mark which any student may receive as the result of reexamination for the removal of condition.

6. If the course in which the student is conditioned be a continuous one, the instructor in charge, may at his discretion, excuse the student from reexamination and allow him to obtain credit by passing his course successfully during the following semester. If such a student fails in the work of last semester, he shall be regarded as having failed in the work of the two semesters.

7. Unexcused absence from a regular examination is construed as a failure therein.

8. The failure to obtain university credit in a subject in which a grade of "4" has been received, before the beginning of the next academic year, shall mean that the grade of "4" has become a grade of "5," except when due to prolonged and serious illness or unavoidable detention, to be determined by the Dean, and except in cases governed by other rules. In the former case, the student shall have the privilege of taking the examination for the removal of condition.

9. A grade of "5" shall indicate that the student receiving such a grade has failed in the subject in which the grade was received. Further, that he will not be entitled to reexamination until he repeats the subject in which he has failed during the period which the instructor in charge may recommend.

10. Students who, at the end of the academic year, have recorded against them two failures will not be allowed to continue their work in the College.

11. Any student may be required to withdraw from the College at any time whenever in the opinion of the faculty it is manifest that he is incompetent for his work, or for any reason he is unfit to continue his course.

REQUIREMENTS FOR GRADUATION

At the end of his medical studies, a student who has passed all of the required examinations satisfactorily will receive the degree of Doctor of Medicine under the following conditions:

1. He must be twenty-one years of age and of a reputable character.
2. He must have satisfied all the requirements for admission to this college and completed as a regularly matriculated medical student a five-year's course of medical study equivalent in its standards to that given here. The last three years must be spent in this college, unless permission for a different arrangement has been obtained from the faculty.
3. His graduation must then be recommended by the University Council and approved by the Board of Regents.

GRADUATION WITH HONORS

The degree of Doctor of Medicine "cum laude" shall be granted to students in the regular course who have obtained a grade of 2 or better in all subjects taken during five years' residence in the College. The degree of Doctor of Medicine "summa cum laude" shall be granted to students in the regular course who have obtained a grade of 1 in not less than 75 per cent of all subjects taken during five years' residence in the College, and a grade of 2 in all other subjects. This is equivalent to an average of 1.25 or better.

MILITARY AND PHYSICAL INSTRUCTION

Military Science and Tactics is a required subject for graduation and must be completed during the first two years of residence in the University.

One hour a week of physical training, in addition to military science and tactics, will be required of all students during their first four years of residence in the University, unless exempted therefrom for valid reasons by proper authority.

For detailed information regarding Military Science and Physical Education, see bulletin of the Departments of Physical Education and Military Science.

THE BAILON-DE LA RAMA SCHOLARSHIP IN MEDICINE

On January 11, 1928, Mrs. Dolores de la Rama Vda. de Bailon presented the University of the Philippines with a gift of ₱50,000 for the purpose of furnishing needy Filipino students with means to finance their studies. This is known as the Bailon—De la Rama Scholarship Fund. This is a permanent fund, only the interest accruing from whose investment is to be made.

Regular students in the College of Medicine are entitled to the benefits of this Scholarship Fund.

The scholarships are awarded, after competitive examinations, to those who attain the highest ratings, as determined by the Bailon—De la Rama Scholarship Committee of the University of the Philippines appointed for the purpose.

The scholarship carries with it a pension of not more than ₱50 a month, in addition of ₱150 given to the beneficiary at the beginning of each school year for books and tuition.

The tenure of the Scholarship is conditioned upon the scholar's not failing in any subject included in the course.

ORGANIZATION OF INSTRUCTION

The curriculum is organized under twelve departments:

1. Anatomy (including histology and embryology).
2. Physiology (including biochemistry).
3. Pathology and Bacteriology.
4. Pharmacology.
5. Hygiene (including parasitology).
6. Medicine (including dermatology, neurology, psychiatry, roentgenology, therapeutics, tropical medicine, and medical bibliography and preparation of articles for publication).
7. Surgery.
8. Pediatrics.
9. Obstetrics.
10. Ophthalmology, Otology, Rhinology and Laryngology.
11. Gynecology.
12. Legal Medicine (including medical economics and ethics, and history of medicine).

The course of study extends over five years, including the intern year.

The work during the first two years is, in the main, confined to the fundamental sciences of medicine, the time of the student being largely devoted to laboratory work. During the first year this consists of work in gross anatomy, histology, embryology, neuro-anatomy, physiology and biochemistry. During the second year it consists of pathology, bacteriology, parasitology, pharmacology, physical diagnosis, surgical anatomy, principles of surgery and minor surgery.

During the third and fourth years the time is largely devoted to the various clinical branches in the Philippine General Hospital and its Free Dispensary which is entirely under the control of the Dean and the Heads of the Clinical Departments of the College, emphasis being given to clinical instruction.

Since April, 1923, the fifth year consists of one year internship in the Philippine General Hospital. The hospital has 483 beds; 154 medical, 170 surgical, 50 pediatric, 48 obstetric, 47 for diseases of the eye, ear, nose and throat and 14 gynecologic. Besides these facilities, the hospital offers excellent material for clinical instruction in its free dispensary, where an average of 506 patients are treated daily, and also in its out-obstetric service, where an average of 4 patients are attended every day.

Internship is by rotation: 120 days being required in medicine, 90 in surgery, and 28 days in each of the other departments. The interns are divided into small sections, four sections being assigned at a time in medicine, three in surgery and one in each of the other departments, namely, pediatrics, obstetrics, eye, ear, nose and throat, gynecology, and laboratories. The heads of departments grade their interns weekly and send their grades to the Chief of Clinics who must call those who have not rendered a satisfactory service during the week.

The interns' rotation of service is shown in the following plan:

Departments	April	May	June	July	August	September	October	November	December	January	February	March
Medicine	A	A	A	A	B	B	B	B	C	C	C	C
Surgery	B	B	B	B	C	C	C	C	A	A	A	A
Gynecology	1-3-4	1-2-4	1-2-3	2-3-4	1-3-4	1-2-4	1-2-3	2-3-4	1-3-4	1-2-4	1-2-3	2-3-4
Obstetrics	B ₂	B ₃	B ₄	B ₁	C ₂	C ₃	C ₄	C ₁	A ₂	A ₃	A ₄	A ₁
Pediatrics	C ₁	C ₂	C ₃	C ₄	A ₁	A ₂	A ₃	A ₄	B ₁	B ₂	B ₃	B ₄
Ophthalmology and Otorhino- laryngology	C ₂	C ₃	C ₄	C ₁	A ₂	A ₃	A ₄	A ₁	B ₂	B ₃	B ₄	B ₁
Laboratories .	C ₃	C ₄	C ₁	C ₂	A ₃	A ₄	A ₁	A ₂	B ₃	B ₄	B ₁	B ₂
H o s p i t a l S e r v i c e												

(Letters designate sections; a figure following, one fourth section)

Interns are required to take complete clinical histories, which include physical, laboratory and X-ray examinations, operative findings and technic of operations, if any, daily observations and end-results, including necropsy findings which they are required to attend, verify, and report on. Histories are finished within the first 24 hours, and the laboratory and other examinations within the first 48 hours of a patient's admission.

In addition to their work in the routine examination of blood, urine, stools, and gastric contents, they assist in the Department of Laboratories in the more complicated chemical, bacteriologic, and serologic work.

They assist members of the Department of Pathology and Bacteriology, or they are allowed individually to perform autopsies under supervision.

In the Department of Medicine they receive instruction in the therapeutics of the roentgen-ray and in the interpretation of X-ray plates and fluoroscopic findings.

In the Department of Surgery and allied Departments, they administer anesthesia, assist at the operations on their respective patients and do their own dressings under supervision.

In the Department of Obstetrics they attend the delivery of normal maternity patients under the supervision of the residents and assist only in abnormal cases.

They are required to follow the daily round of the Head of the Department or of the Resident concerned in the ward.

Interns serve by rotation as ambulance surgeons and as dispensary medical officers. While performing these duties they are exempted from their regular work in the departments to which they are assigned. Their work in these units as well as elsewhere which is not under the control of the heads of clinical departments, is under that of the Directors and the Assistant Director of the Hospital.

They are required to attend the clinical conferences in their respective departments.

They are likewise required to attend the dispensary clinics and assist the members of each department on duty therein.

As time permits, they assist the members of their departments in any clinical investigation in progress.

Interns are required to attend the monthly staff meeting which is held every Thursday following the first Monday of each month. The main purpose of this meeting is: PRESENTATION, ANALYSIS, AND REVISION OF THE CLINICAL RECORDS OF CASUALTIES INCLUDING DEATHS, INFECTIONS, COMPLICATIONS, UNIMPROVED CASES AND IN FACT ANYTHING CLOSELY RELATED TO THE CLINICAL WORK IN THE HOSPITAL.

This staff conference is characterized by a generous spirit of giving and receiving, where knowledge is pooled for the benefit of all present and particularly for the patient; where we "find the facts, filter the facts, focus the facts, fix the facts and face the facts fearlessly."

They must also attend the monthly meeting of the Manila Medical Society, and the weekly history meeting and journal club of each department.

During their internship, the future practitioners are given ample opportunity to study common and minor disorders in the out-patient clinics, as well as serious medical and surgical conditions in the wards. Cases of unusual interest are published in the Official Bulletin of the Hospital, which they must see during their demonstration in the wards. Interns are taught to appreciate such human factors as economics, social, home, employment and psychologic factors which play such an important role in medical service and community health work. In their progress thru their intern service they are given increasing responsibility in the treatment of patients under their care, and while their work is under supervision yet they are encouraged to develop their individual initiative and sense of responsibility.

Since the year 1931 interns are no longer required to stay in the Hospital, with the exception of those who are on 24-hour duty. Instead they stay from 7:30 to 11:30 or 12 a.m. and from 1 to 4 or 5 p.m., depending upon the exigencies of the service in each department. Some departments observe Sundays and holidays and do not require all their interns to report except those as above assigned or who are on some other special assignment.

DEPARTMENT OF MEDICINE

Internship. This lasts 120 days. In addition to their other duties, interns are required to study the X-ray plates of their patients and to consult the roentgen-ray department about their interpretation.

DEPARTMENT OF SURGERY

Internship. Fifth year students are required to take three months' internship in this Department before graduation.

DEPARTMENT OF PEDIATRICS

1. Duration—28 days.

2. Working Hours—Working Days—7:30-12:00 a.m. and 1-5 p.m. During these hours, interns must be either in the ward or in the dispensary; and if elsewhere they must note it down on the time record books.

Sundays and holidays. Every Intern must stay in the ward from 8:00 a.m. to 12:00 noon and after this time at least one intern must stay in the ward or in the hospital for emergency work. THE REST MAY ASK FOR LEAVE FROM THE SENIOR RESIDENT (OR IN HIS ABSENCE THE PEDIATRICIAN ON DUTY); BUT ONLY WHEN THE MORNING OBSERVATIONS AND OTHER UNFINISHED WORK HAVE BEEN COMPLETED.

3. Conferences or reviews: These reviews are given from 2:00 to 3:00 p.m. on the following days:

(a) On Mondays—Tuberculosis in Children; Infantile Beriberi; Heart Diseases—*Abad*.

(b) On Tuesdays—Infant Feeding; Empyema; Pneumonia; Skin Diseases—*Paulino*.

(c) On Wednesdays—Meningitis; Typhoid Fever; Malaria; Blood Diseases—*Quintos*.

(d) On Thursdays—Dysenteries; Nephritis—*Paguyo*.

4. Miscellaneous. Interns are required to prepare protein milk, butter milk, and butter flour mixture (under the supervision of Dr. Paulino). They are also required to apply mustard pack, mustard plaster, jacket compress, hot tub bath and other treatments from time to time. They may perform thoracentesis, paracentesis, spinocentesis, hypodermoclysis, and intravenous and intraperitoneal injections under supervision.

5. Interns' Note Book. A note book wherein to write interesting cases and abstracts of medical literature is required of each intern, to be handed to the Senior Resident at the end of their assignment. It is intended to fulfill the following services:

(a) As a mirror of diligence and enthusiasm in his work.

(b) As a reference for his future practice.

Each note-book should contain the following:

(a) Abstracts of the cases selected by the Professor. This abstract should consist of a summary of the history, a short discussion of the diagnosis, prognosis, treatment and peculiar course of each case, and lastly an epicrisis or lesson derived from the same.

(b) Abstracts on collateral reading assigned, and

(c) Solution or answers to the problems given by the Professor.

6. Interns' Record Book. Every intern must write down the summary of his work done during the last 24 hours in the Intern's Record Book as soon as he reports to duty every morning.

DEPARTMENT OF OBSTETRICS

1. Duration: 28 days.

2. Working Hours. Working days—7:30-11:30 a.m. and 1-5 p.m.

Sundays and holidays—7:30-12:00 a.m.

3. Special assignments.

(a) Emergency—Two interns usually are assigned as emergency inquired to write a complete report on two normal and one abnormal cases followed by him from the time of admission to the time of discharge to turn for 24 hours to assist in the delivery and care of patients requiring immediate attention either inside or outside of the hospital.

(b) Report on Cases: At the end of his assignment each intern is trained in grasping facts as a whole, to cultivate reflection and analysis, and to give him a feeling of responsibility in the care of a patient.

DEPARTMENT OF EYE, EAR, NOSE AND THROAT

1. Duration: 28 days.

2. Working Hours. Working days—7:30-11:30 a.m. and 2-4:30 p.m.
Sundays and holidays—8-10 a.m.

One intern in Eye, Ear, Nose and Throat on duty daily by rotation.

DEPARTMENT OF GYNECOLOGY

1. Internship Duration: 28 days.

2. Working Days: 7:30-11:30 a.m. and 1-5 p.m.

Sunday and holidays, 8 to 12 a.m., except in the case of emergency interns who are assigned for 24 hours.

DEPARTMENT OF LABORATORIES

1. Duration: 28 days.

2. Working Hours Working days—7:30-11:30 a.m. and 1-5 p.m.
Sundays and holidays—None.

An intern is assigned by rotation as emergency intern for 24 hours to assist the pathologist on duty in emergency laboratory examinations.

3. Assignments:

(a) Rotation assignments in the different laboratory divisions which consist of the following: the laboratory of clinical microscopy, the laboratory of clinical chemistry, the laboratory of histopathology, the laboratory of serology, the laboratory of basal metabolism, and laboratory of bacteriology.

Interns are assigned in these different laboratories for a varying number of days according to the kind of work they need most.

Their work ranges from the cleaning of glasswares, acquaintance with the nature and use of the apparatus to the preparation and standardization of re-agents, duplication of technical procedures, reading and interpretation of results. In this way they acquire a comprehensive knowledge of all the routine procedures that are employed in a central general laboratory.

(b) They are required to do special reading in connection with their actual work and supplementary readings with reference to modern medical problems.

(c) They are further required to see and read the histories of those patients on whom important findings are noted; and to search for import-

ant and rare cases on which they make or duplicate the necessary laboratory examinations.

Interns are advised to apply themselves to their work as practically and as autonomously as possible, without the necessity of having to be constantly directed. They are made to realize their handicaps and to take full advantage of all their opportunities to overcome them.

HOSPITAL SERVICE

Interns (two) serve by rotation as assistant ambulance surgeons and as dispensary medical officers. As assistant ambulance surgeons they answer ambulance calls and assist the ambulance surgeon, who is a member of the Resident Staff, in the admission and classification of hospital patients. As dispensary medical officers they admit and classify patients for the different dispensary clinics.

Assistant Ambulance Surgeon—8:00 a.m. to 8:00 a.m.

Dispensary Medical Officer—7:30 to 11:00 a.m. and 2 to 3:30 p.m., except Saturdays.

Hours of work in each subject in the first four years of the course

Subjects	First year		Second year		Third year		Fourth year		Totals
	First semester	Second semester	First semester	Second semester	First semester	Second semester	First semester	Second semester	
ANATOMY									
1. Gross Anatomy	208	256	.....	.....	.....	.....	.....	.....	848
2. Histology	192	.....	.....	.....	.....	.....	.....	.....
3. Embryology	76	.....	.....	.....	.....	.....	.....	.....
4. Neuro-Anatomy .....	.....	96	.....	.....	.....	.....	.....	.....
PHYSIOLOGY AND BIOCHEMISTRY									
1. Biochemistry	192	.....	.....	.....	.....	.....	.....	.....	512
2. Physiology .....	.....	320	.....	.....	.....	.....	.....	.....
PATHOLOGY AND BACTERIOLOGY									
1. Pathology (General and Systemic) .....	.....	.....	256	.....	.....	.....	.....	.....	642
2. Bacteriology (Medical) .....	.....	.....	204	.....	.....	.....	.....	.....
3. Advanced Pathology .....	.....	.....	.....	.....	.....	.....	.....	80	
4. Clinical Pathology .....	.....	.....	.....	102	.....	.....	.....	.....
PHARMACOLOGY									
1. Pharmacology .....	.....	.....	.....	240	.....	.....	.....	.....	274
2. Pharmacology .....	.....	.....	.....	.....	34	.....	.....	.....
HYGIENE									
1. Hygiene 1 (Parasitology M) .....	.....	.....	176	.....	.....	.....	.....	.....	346
2. Hygiene 2 (Principles of Hygiene and Public Health) .....	.....	.....	.....	.....	136	.....	.....	.....
3. Hygiene 3 (Special Problems in Hygiene and Public Health) .....	.....	.....	.....	.....	.....	.....	34	.....

Hours of work in each subject in the first four years of the course—Ctd.

Subjects	First year		Second year		Third year		Fourth year		Totals
	First semester	Second semester	First semester	Second semester	First semester	Second semester	First semester	Second semester	
MEDICINE									
1. Physical Diagnosis				48					780
2. Medical Bibliography and Preparation of Articles for Publication			11						
3. Dermatology and Syphilology						48			
4. Medicine (Medicine, Clinical Diagnosis, Clinical Medicine, Clinico-Pathological Conferences (a), Infectious Diseases, Therapeutics and Tropical Medicine)						264			
5. Medicine (Ward Work (b), Clinico-Pathological Conferences (c), Dermatology and Syphilology, Neurology, Neurology Clinic, Psychiatry, psychiatry Clinic and Roentgenology)							409		
SURGERY									
1. Surgery (Surgical Anatomy, Principles of Surgery, Minor Surgery, Surgical Dispensary)				176					82
2. Surgery (Surgery, Surgical Dispensary, Surgical Pathology, Surgical Ward Class, and Surgical Clinic)						327			
3. Surgery (Ward Work, Operative Surgery, Surgical Clinic, Genito-Urinary Surgery, Genito-Urinary Clinic, Orthopedics, and Orthopedic Clinic)							293		
OBSTETRICS									
1. Obstetrics (Pathological and Physiological)						99			195
2. Obstetrics (Ward Work) ..							96		
PEDIATRICS									
1. Pediatrics (Pediatrics and Pediatric Conference)						99			229
2. Pediatrics (Ward Work and Pediatrics)							130		

a Given jointly with the Department of Pathology and Bacteriology.
b Ward work in medicine is devoted to Tropical Medicine once a week.
c Given jointly with the Department of Pathology and Bacteriology.

Hours of work in each subject in the first four years of the course—Ctd.

Subjects	First year		Second year		Third year		Fourth year		Totals
	First semester	Second semester	First semester	Second semester	First semester	Second semester	First semester	Second semester	
OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY									
1. Ophthalmology and Otorhinolaryngology (Ophthalmology, Otorhinology and Eye, Ear, Nose and Throat Dispensary).....						85			167
2. Ophthalmology and Otorhinolaryngology (Otorhinology, Eye, Ear, Nose and Throat Dispensary) .							82		
GYNECOLOGY									
1. Gynecology (Gynecology and Gynecological Dispensary).....						42			98
2. Gynecology * (Ward work and Gynecological Clinic)							56		
LEGAL MEDICINE									
1. Legal Medicine (Legal Medicine and History of Medicine, Medical Economics and Ethics)....							82		82
Total	1,360		1,213		1,134		1,262		4,969

* Ward work in Surgery is devoted to Gynecology for 2 weeks.

ANATOMY

ARTURO GARCIA, A.B., M.D., Professor of Anatomy and Head of Department.¹

JUAN C. NANAGAS, M.D., Professor of Anatomy; Acting Head of Department.²

MIGUEL CAÑIZARES, A.B., M.D., Associate Professor of Anatomy.

MARCIANO LIMSON, M.D., Assistant Professor of Anatomy.

FIDEL CUAJUNCO, M.D., Assistant Professor of Anatomy.

JOSE ENCARNACION, M.D., Instructor of Anatomy.

GERONIMO MANAHAN, M.D., Instructor of Anatomy.

PEDRO G. REYES, M.D., Instructor of Anatomy.

JOSE N. DUALAN, M.D., Instructor of Anatomy.

JOSE A. BACNIS, R.N., Instructor of Anatomy for Nurses.

VICENTE DE LOS SANTOS, Graduate in Fine Arts, Anatomical Artist.

¹ On leave during first semester of 1931-1932.

² In charge of the Department during the first semester of 1931-1932.

COURSES

The Department of Anatomy offers: (I) required courses in the various anatomical sciences to students of the College of Medicine, the School of Nursing and the Department of Physical Education and (II) elective courses to qualified students desirous of doing advanced work and original research in any of the fields of Anatomy.

I. REQUIRED COURSES

a.—*In the College of Medicine.* All the required courses in anatomy given to medical students, are completed during the first year of the medical curriculum.

1. *GROSS ANATOMY*.—This course covers the systematic study of the gross anatomy of the human body. The instruction is entirely practical and largely individual. A complete and satisfactory dissection of the entire human body, with the exception of the brain which is studied in Neuroanatomy, is made by each student. The entire class dissect the same region at the same time. Personal quizzes and demonstrations to sections of 10-12 students, are periodically conducted throughout the year and weekly supplementary lectures are given to the class in which are presented the morphological significance and functional importance of the various parts, with special emphasis to their bearing and relations with the clinical branches of medicine. Two students dissect an entire cadaver, each being assigned to a lateral half.

Osteology and Arthrology are studied parallel with the work in dissection. One complete disarticulated skeleton is loaned to every two students.

Time: 2 hours lecture and 11 hours laboratory per week; first semester, first year. Total, 208 hours.

2 hours lecture and 14 hours laboratory per week; second semester first year. Total, 256 hours.

Drs. GARCIA, NAÑAGAS, CAÑIZARES, LIMSON, CUAJUNCO, ENCARNACION, MANAHAN, REYES, and DUALAN.

2. *MICROSCOPIC ANATOMY (Histology)*.—Instruction in this course is given by lecture-recitations and laboratory work, supplemented by demonstrations with fresh materials and the projection of microscopic preparations and lantern slides. In the laboratory, the students examine and interpret the minute anatomy of the cell and the intrinsic structure of tissues and organs. Ample opportunity to study both gross and microscopic specimens in the fresh and after preparation, is given the class, which for purposes of better supervision, is divided into small sections. As far as practicable, the teaching is made individual. One hundred or more prepared microscopic sections of the most important tissues and organs, are loaned to each student besides the special demonstration slides which are shown to the class to illustrate the range of histological technique.

Time: 3 hours lecture and 9 hours laboratory per week; first semester, first year. Total, 192 hours.

Drs. GARCIA, NAÑAGAS, CAÑIZARES, LIMSON, CUAJUNCO, ENCARNACION, MANAHAN, REYES and DUALAN.

3. *DEVELOPMENTAL ANATOMY (Embryology)*.—This is a lecture and laboratory course devoted to the study of the fundamental processes of prenatal and postnatal development, with special reference to man and mammals. Special emphasis is given the embryological interpretation of the relationships of organs and systems as occurring in adult and the relations of embryological phenomena with clinical subjects. Lectures are illustrated by complete collections of models, charts, and lantern slides. The work in the laboratory is largely individual. The class is divided into sections for group supervision. Students are given all the opportunity to examine and study in serial sections of avian and mammalian embryos and dissected pig fetuses, the chronologic sequence of the various developmental changes.

Time: 2 hours lecture and 4 hours laboratory per week; first semester first year. Total, 96 hours.

Drs. CAÑIZARES, LIMSON, ENCARNACION, CUAJUNCO, MANAHAN, REYES, and DUALAN.

4. *NEURO ANATOMY*.—This course takes up the systematic study of the central nervous system, including the autonomic nerves and the organs of special sense. The instruction is planned to give the students a knowledge of the morphology, position and relations of the various parts, nuclei and tracts of the cerebrospinal axis, both from actual dissection of gross specimens and from the microscopic study of serial sections. The functional significance of the structures is stressed in correlation with the morphological observations made in the laboratory. Reconstructions of important conduction paths of the cerebrospinal system and of the special sense organs, are made diagrammatically on charts.

One preserved human brain for dissection and a complete collection of serial Weigert preparations for microscopic study, are issued to every two students. Special neurological preparations, lantern slides, charts and models are also used in the course.

Time: 2 hours lecture and 4 hours laboratory per week; second semester first year. Total, 96 hours.

Drs. NAÑAGAS, CAÑIZARES, GARCIA, LIMSON, CUAJUNCO, ENCARNACION, MANAHAN, REYES, and DUALAN.

b.—*In the School of Nursing and in the Department of Physical Education.* The various courses in Anatomy given to students of the School of Nursing and Department of Physical Education, may be seen described in the sections of their respective catalogue announcements.

II. ELECTIVE COURSES

1. *TOPOGRAPHICAL ANATOMY*.—This is a laboratory course dealing with the study of the topography and morphological significance of the different organs and their correlations with surgery and medicine.

Frozen cross sections and models are used.

Time: Hours to be arranged.

Drs. GARCIA, NAÑAGAS, CUAJUNCO, CAÑIZARES and LIMSON.

2. **HISTOLOGICAL TECHNIQUE.**—The more common methods of laboratory technique in Histology as well as the more special procedures of staining and injecting, are studied in this course. Facilities are available for small classes of students.

Time: Hours to be arranged.

Drs. GARCIA, NAÑAGAS, CUAJUNCO and LIMSON.

3. **RESEARCH IN ANATOMY.**—The privilege of doing advanced work and engaging in original research in anatomy, is extended to qualified students in limited numbers.

Time: Hours to be arranged.

Drs. GARCIA, NAÑAGAS, CUAJUNCO and LIMSON.

PHYSIOLOGY AND BIOCHEMISTRY

ISABELO CONCEPCION, M.D., *Professor of Physiology and Head of Department.*

EMILIO BULATAO, M.D., *Professor of Physiology.*

NARCISO CORDERO, M.D., *Assistant Professor of Physiology.*

WENCESLAO PASCUAL, M.D., *Assistant Professor of Physiology.*

JUAN SALCEDO, Jr. M.D., *Instructor in Physiology.*

MARIANO OCAMPO, A. B., M.S. (Chem.) *Instructor in Biochemistry.*

VICENTE LIMSON, Ph.C., *Assistant in Biochemistry.*

DELFIN D. SAMSON, Ph.C., *Assistant in Biochemistry.*

1. **BIOCHEMISTRY.**—Three hours of lectures or conference and nine hours of laboratory work a week during the first semester of the first year. Total 192 hours.

Drs. CONCEPCION, CORDERO, and Mr. OCAMPO.

This course consists of lectures, conferences, and laboratory exercises on the chemistry of proteins, fats, and carbohydrates; the chemistry of body tissues, blood, digestion, secretions excretions, and metabolism. A considerable portion of the course is devoted to the qualitative and quantitative examination of urine, gastric content, blood, and milk.

2. **APPLIED BIOCHEMISTRY** (Elective).—A course covering the most common methods of diagnosis, including the micro-chemical methods of examination of blood, urine, together with a discussion of the recent advance in biological chemistry. The laboratory work includes analysis of blood, urine, duodenal, content, etc.

Drs. CONCEPCION, CORDERO, and Mr. OCAMPO.

3. **PHYSIOLOGY.**—Five lecture hours and fifteen laboratory hours a week throughout the second semester of the first year. Total, 320 hours.

Drs. BULATAO, CORDERO, PASCUAL, and SALCEDO.

The course is divided into four parts. Part I includes the study of muscular contraction, peripheral nerve conduction and conduction through the central nervous system; Part II, blood and circulation; Part III, body fluids and respiration; Part IV includes the physiology of digestion and metabolism, excretion, internal secretions and special senses.

The different members of the staff take up the whole class during lecture hours on previously assigned topics. The class is frequently divided into small sections between staff members during conferences to correlate the laboratory work with didactic instruction.

A great portion of the laboratory work is performed by the students in groups composed of three members. Exercises requiring the use of mammalian laboratory animals or of complicated apparatus are performed by them in bigger groups. Several exercises are demonstrated by different members of the staff either to the whole class or to small sections.

4. RESEARCH IN BIOCHEMISTRY AND PHYSIOLOGY.—The facilities of the department are available for advanced work and research to a limited number of qualified students or graduates who have had the necessary training.

Drs. CONCEPCION and BULATAO

PATHOLOGY AND BACTERIOLOGY

LIBORIO GOMEZ, Ph.D., M.D., Professor of Pathology and Bacteriology and Head of Department.

MARIA PAZ MENDOZA-GUAZON, M.D., D.T.M., Professor of Pathology and Bacteriology.

CARLOS MONSERRAT, A.B., M.D., Associate Professor of Pathology and Bacteriology.

REGINO J. NAVARRO, M.D., Assistant Professor of Pathology and Bacteriology.

JUAN Z. SANTA CRUZ, A.B., M.D., Assistant Professor of Pathology.

BENJAMIN BARRERA, M.D., Instructor in Pathology and Bacteriology.

PASTOR R. SAPINOSO, B.S., M.D., Instructor in Pathology and Bacteriology.

PATROCINIO J. SEVILLA, Ph.C., B.S., (Phar.), Phar.D., Assistant in Pathology and Bacteriology.

The Department of Pathology and Bacteriology occupies practically the whole lower floor of the main building of the College of Medicine. The east wing contains a large, well-equipped general laboratory for teaching purposes. Adjoining this teaching laboratory are staff laboratory, equipped for routine and research, the preparator's room, the office of the department, and a record room for the storage of autopsy protocols and slides and teaching materials which is also available for the use of graduate students or research workers.

The pathological museum occupies the large room of the west wing. It contains over 2,000 mounted specimens illustrating general pathology and various phases of diseases. This includes a particularly valuable collection of specimens demonstrating the lesions more frequently encountered in tropical countries. There are numerous jars containing unmounted duplicates for individual distribution to students. The chief sources are the autopsy room of the college and the operating rooms of the Philippine

General Hospital, though numbers of valuable specimens have been donated by the accession of the museum of the Bureau of Science, which contained many specimens illustrating experimentally produced lesions in laboratory animals and valuable collections of series of cases on which was based much of the pioneer scientific work in the Philippine Islands. The museum material is catalogued and is being constantly increased.

Autopsy material is abundant and widely varied in character. The City Morgue, which is also the morgue of the Philippine General Hospital, is in the building of the College of Medicine. The morgue and autopsy rooms are of modern type with facilities for the refrigeration of 50 bodies by means of ammonia gas; in a part of this freezing temperature can be maintained. As regards autopsy work the morgue is administered in co-operation with this department, and a minimum of 600 annually are performed. Members of the staff also perform autopsies, chiefly on bodies dying of infectious diseases, in the morgue of the San Lazaro Hospital. Over 16,000 autopsies have been performed in the department since its organization. The records of these are bound in readily accessible form and the anatomical diagnoses are cross-indexed for case reference. Histological preparations from most of these materials are filed in the records of the department and are available for the teaching or research.

COURSES

The obligatory courses in this department under the new curriculum extend throughout the first semester of the second year, and the second semester of the fourth year, in the College of Medicine. Third, fourth, and fifth year students are required to attend the weekly clinico-pathological conference which is also open to the medical profession at large. Elective courses are offered to students of the fourth year. Attendance at and performance of autopsies by the students are obligatory during the regular required courses in pathology, and during the fourth and fifth years, students who have seen the clinical aspects of cases dying in the wards of the Philippine general Hospital, are frequently enabled to see their corresponding structural changes.

1. *GENERAL AND SYSTEMIC PATHOLOGY*.—Four didactic and twelve laboratory hours a week during the first semester of the second year. Total, 256 hours.

Drs. GOMEZ, MENDOZA-GUAZON, SANTA CRUZ, BARRERA, and SAPINOSO.

This course comprises an elementary survey of general pathology, including disturbances of the body fluids, retrograde and reparative processes, inflammation, the principal pathogenic bacterial and fungus infections and a consideration of tumors. Finally the more common pathology of the various organ systems is taken up rapidly. Special stress is laid upon the relation of one lesion to another, and the interdependence of structure and function.

The laboratory work is planned primarily to illustrate the fundamental principles involved in the pathologic process and consists of a study of gross specimen and histopathology as seen in prepared microscopic slides

which are loaned for the period of the course. This is supplemented by introductory demonstrations by lantern slides and the projection of additional microscopic preparations, and by a collection of photographs, drawings, and illustrations from standard textbooks and original sources. The importance of gross pathology is recognized by the free use of both mounted and unmounted museum specimens, and compulsory attendance at autopsies. Occasional visits are made to the dispensaries and wards of the Philippine General Hospital and San Lazaro Hospital in an effort to correlate the clinical and pathological findings.

2. MEDICAL BACTERIOLOGY.—Three didactic and nine laboratory hours a week during the first semester of the second year. Total, 204 hours.

Drs. GOMEZ, MONSERRAT, NAVARRO, BARRERA and SEVILLA.

This course covers the subjects of bacteriology and immunology; including sterilization, staining, bacteriological technique, morphology, media making, culturing of bacteria, and the general principles of infection and immunity. Then follows a careful study of most of the pathogenic bacteria and fungi. Immunity is taught by actual laboratory exercises and experiments done by the students themselves in the different technic of immunological methods and required to observe results. Frequently fresh material is obtained by the students themselves from hospital, dispensary and morgue cases and the organisms so obtained are identified and compared with the stock laboratory stains.

3. CLINICAL PATHOLOGY.—This course consists of lectures, quizzes, recitations and laboratory work on the systematic analysis of sputum, urine, feces, blood, spinal fluids, gastric contents, exudates and transudates ordinarily required in clinical work. Bacteriological cultures from clinical materials, the more important diagnostic serologic tests and the special microchemical and colorimetric methods of examinations are demonstrated. Interpretation of findings and their correlation with other clinical data are emphasized and reference to corresponding pathologic changes are discussed. Emphasis is laid on the importance of the proper collection of specimens, on the indication of the different laboratory examinations, and on the selection of appropriate technical procedures.

Given to second year medical students, 6 hours weekly.

Prerequisites: Anatomy, Physiology, Biochemistry, Parasitology, Bacteriology, and Pathology.

Drs. NAVARRO, BARRERA, and SAPINOSO.

4. CLINICO-PATHOLOGICAL CONFERENCE.—One hour a week during the third and fourth years in conjunction with the Department of Medicine. Total, 66 hours.

Dr. GOMEZ and STAFF.

The clinical histories of cases from the Philippine General Hospital that have come to autopsy are presented and discussed by a member of the Department of Medicine, after which the pathological findings of the cases are discussed and preserved specimens demonstrated.

5. *ADVANCED PATHOLOGY*.—Two didactic and three laboratory hours a week during the second semester of the fourth year. Total, 80 hours.

Drs. GOMEZ, MENDOZA-GUAZON, SANTA CRUZ, BARRERA and SAPINOSO.

This course consists of a systematic review of systemic pathology, autopsy technic and correlation of pathology with clinical observations. Practically all the museum specimens are gone over and attention is directed to the particular lesion that is illustrated. Unmounted gross specimens are distributed to the students for study and description in their laboratory notebooks. The students are given instructions on autopsy and histological technic. Each student performs at least one complete autopsy under the immediate direction of a member of the staff and he makes the histological preparations and bacteriological cultures and writes the protocol. All the autopsies performed by the department during the week are discussed. Emphasis is laid upon the disease as a whole and the conclusion as to its nature is arrived at not from any one point of view alone, but from all the available data—clinical, laboratory, and anatomical.

6. *SPECIAL PATHOLOGY* (Elective).—Special courses of 68 hours or more for a limited number of advanced students will be arranged, the exact scope to suit immediate conditions and, so far as practicable, the preferences of the students.

Drs. GOMEZ and MENDOZA-GUAZON.

7. *CLINICAL BACTERIOLOGY* (Elective).—An elective course of 68 hours offered to fourth-year students. It will be given whenever a sufficient number of students apply for it. It will be devoted to the practical application of modern bacteriological and serological methods to the diagnosis of clinical cases.

Drs. NAVARRO and BARRERA.

The courses in pathology and bacteriology for the students of the School of Pharmacy are described in the catalogue of the school.

PHARMACOLOGY

DANIEL DE LA PAZ, M.D., Professor of Pharmacology and Head of Department.

FAUSTINO GARCIA, M.D., Professor of Pharmacology.

ROMULO GUEVARA, M.D., Associate Professor of Pharmacology.

LAURO H. PANGANIBAN, M.D., Instructor in Pharmacology.

SOLOMON D. BRUNO, Ph.C., Assistant in Pharmacology.

The chief objectives of the teaching of pharmacology consist (1) in imparting sufficient pharmacologic knowledge indispensable to a scientific understanding of therapeutics, (2) in cultivating the mental attitude which requires demonstration of pharmacologic statements and deduces from observations the conclusions which they justify, and (3) in familiarizing the students with the technical procedure generally employed in pharmacologic experimentation.

COURSES¹

Two courses are offered to undergraduate medical students in this department.

The first course extends over the second semester of the second year. Its early part is devoted to chemical pharmacology, in which the students have an opportunity of learning with the aid of laboratory exercises the essentials of pharmacy, the art of prescribing medicines, the principles and reactions employed in toxicologic analysis, the reactions of antidotes, and the physico-chemic phenomena which are frequently invoked in the explanation of the actions of drugs. With each drug are discussed the important effects and their scientific explanations, the symptoms and treatment of poisoning, the *materia medica*, and the clinical uses. The laboratory exercises in pharmacodynamics are selected to illustrate the principal pharmacologic phenomena and the methods and processes of pharmacologic experimentation. Fifteen hours (didactic 6, laboratory 9) a week.

The second course is given during the first semester of the third year. The essentials of the first course are applied to the study and analysis of drug action on patient. The student is assigned cases in hospital wards. He ascertains the time of action, the dosage and the influence of drug on the course of the disease. His observations and conclusions are presented for class conference. Two hours a week.

RESEARCH

Encouragement is given students who desire to pursue special courses or undertake original investigations in pharmacology. The department has materials and equipment for chemical work and animal experiments.

HYGIENE

HILARIO LARA, M.D., C.P.H., Dr.P.H., Professor of Hygiene and Preventive Medicine, Head, Dept. of Epidemiology, Statistics, and Public Health Administration, and Secretary, School of Hygiene and Public Health; Head, Department of Hygiene and Parasitology, College of Medicine.

WALFRIDO DE LEON, A.B., M.D., D.T.M., Professor of Pathology and Bacteriology, Head, Dept. of Sanitary Bacteriology and Immunology, School of Hygiene and Public Health, and Chief, Department of Laboratories, Philippine General Hospital.

CANDIDO M. AFRICA, M.D., D.T.M. & H., Assistant Professor of Parasitology and Acting Head, Department of Parasitology, School of Hygiene and Public Health.

¹ The courses in pharmacology for students of the School of Pharmacy, and the Philippine General Hospital of Nursing are described in the respective catalogues of those schools.

- PABLO I. DE JESUS, M.D., Dr.P.H., Assistant Professor of Hygiene, and Acting Head, Department of Sanitary Engineering, Industrial Physiology and Chemistry, School of Hygiene and Public Health.
- LAMBERTO LEIVA, M.D., D.T.M., Associate Professor of Parasitology, School of Hygiene and Public Health.
- AMPARO CONCHA-BRILLANTES, M.D., Associate Professor of Hygiene, School of Hygiene and Public Health.
- ALFREDO PIO DE RODA,* M.D., Instructor in Sanitary Bacteriology and immunology, School of Hygiene and Public Health.
- TOMAS M. GAN, M.D., Instructor in Hygiene, School of Hygiene and Public Health.
- GREGORIO T. LANTIN, M.D., Instructor in Hygiene, School of Hygiene and Public Health.

With the reorganization of the School of Hygiene and Public Health on January 1, 1931, and the transfer of the staff of the Department of Hygiene and Parasitology and others to the School to constitute the nucleus of the full time staff of its different departments, the various hygiene and parasitology courses, given by the former department of this same name, are now given by the various departments of the School of Hygiene and Public Health. This school, therefore, assumes at present the teaching duties of the former Department of Hygiene and Parasitology. It is a service school to several colleges and schools of the University of the Philippines such as the College of Medicine, College of Education, School of Pharmacy, Philippine General Hospital School of Nursing, and School of Public Health Nursing in all matters relating to instruction in sanitary bacteriology, immunology, parasitology, hygiene and public health in such an arrangement similar to the status of the Department of Mathematics or that of Physics of this University.

The various courses offered are described in the respective catalogues of the institutions served.

The School in its new quarters offers also opportunities for properly qualified students to undertake research in hygiene and public health.

Hygiene 1.—Parasitology M.—Given to second year medical students during the first semester. Didactic 54, and laboratory 122 hours. Total, 176 hours.

The course consists of lectures, demonstrations, and laboratory work in Protozoölogy, Helminthology, Medical Entomology, and Venomous Animals.

In Protozoölogy, the morphology and life history of the more important human protozoan parasites belonging to the sarcodina, mastigophora, infusoria, and sporozoa are studied. Certain free-living species are taken up for comparative study. Cultures and experimentally infected animals are also utilized. Emphasis will be laid on the morphological differences between pathogenic and nonpathogenic forms. In the laboratory both stained and fresh materials are used, and the students are taught the

*—On fellowship leave. Place temporarily occupied by Dr. Rogelio Relova.

simple and more practical methods of studying and staining the organism, the methods chosen being those best adapted to the purposes of the clinical laboratory and the office of the general practitioner.

In Helminthology, the study is devoted to the morphology of the different groups of parasitic worms and the life cycles of typical species. The students are taught the identification of species which are found in man and domestic animals, the practical methods of obtaining and identifying the eggs, and the methods of prophylaxis.

In Medical Entomology, the study of poisonous insects and arachnid insects parasitic on man, domestic insects, biting flies, mosquitoes, and pseudoparasites are taken up. Lectures are based on a certain amount of laboratory and field work, and study of museum specimens. Attention is paid to the character, habits, life histories, and classification of insects and arachnids, particularly to their role in the transmission of bacterial, protozoan, and helminthal diseases, the production of pathological disturbances, and to prophylactic and remedial measures.

Toward the end of the course a few lecture-demonstrations are given on animals which cause poisoning in man. Special attention will be paid to the general identification of venomous forms of coelenterata, pisces, amphibia, and reptilia; to the nature and effects of animal poisons; and to the treatment of disturbances caused by these animals. Prerequisites: Biology, Anatomy, and Physiology.

Drs. AFRICA, LEIVA, and other members of Department Staff.

Hygiene 2.—Principles of Hygiene and Public Health.—Given to Third year medical students, 8 hours a week, during the first semester. Didactic 2 hours, laboratory and field 6 hours a week. Total 136 hours.

This course consists of lectures, recitations, laboratory exercises, and field demonstrations.

The students are made acquainted with the duties and obligations of the practicing physician to the community with regard to health promotion and conservation as well as with the various duties (in outline form) of a local health officer.

Effort is made to include in the course a summary and a synopsis of the broader community applications of all that a medical student has learned during his preceding years.

This course is given conjointly by the several departments of the School of Hygiene. The biological analysis of water, milk, foods, and other products (biological hygiene) is given by the Department of Sanitary Bacteriology and Immunology; the chemical analysis of water, milk, and other foods including sanitation is given by the Dept. of Sanitary Engineering, Industrial Physiology and Chemistry; while the general public health procedures including vital statistics, epidemiology, control of communicable diseases and other health activities are given by the Department of Epidemiology, Statistics and Public Health Administration. The Head of the latter department as Secretary of the School coordinates the various teaching activities of the several departments as regards this particular course.

After the various laboratory exercises the students are introduced to the practical application of them in the community prevention and control of disease.

The health demonstration unit, which functions under the auspices of the School, the Philippine Health Service, the Public Welfare Commissioner and the Red Cross, affords opportunity for the students to observe and participate, under the guidance of the various instructors, in the conduct of some of the most important public health activities such for instance as infant welfare and maternal hygiene, school child hygiene, food control and sanitation, vital statistics, epidemiology, control of communicable diseases, and others.

Prerequisites: First 2 years of Medical College Curriculum or its equivalents.

Drs. LARA, DE LEON, DE JESUS, CONCHA-BRILLANTES, DE RODA,*
GAN, G. LANTIN, and field Instructors.

Hygiene 3.—Special Problems in Hygiene and Public Health.—Given to the fourth year medical students, one hour twice a week during the first semester. Total, 34 hours.

The course consists of lectures, demonstrations, and conferences on special problems in hygiene and public health. Special attention is given health problems common in the Philippines and other tropical countries. As a prerequisite to this course, each student, after completion of Hygiene 2, is required to make a sanitary survey of the city or town where he lives, during the summer vacation. The result of the survey is presented to the Department in the form of a brief report. Interesting points in these reports are selected and presented to the class in the conferences for discussion and comments.

Prerequisite: Hygiene 2 and one sanitary survey report.

Dr. LARA.

ELECTIVE COURSES

Hygiene 4. Practical Field Work and Demonstration in City and Rural Sanitation.—Hours and work assignment to be arranged with Head of Department. (For advanced students.)

Hygiene 5.—Principles of Vital Statistics.—To be given through arrangement with the Head of Department. (For advanced students.)

Hygiene 6.—Industrial Hygiene, Child Hygiene, and Methods of Epidemiological Investigation.—(For advanced students.)

Hygiene 7.—Public Health Organization and Administration.—For a limited number of advanced students during the first semester.

Hygiene 8.—Research in Public Health.—To be given to advanced and qualified students. Special problems will be assigned to students, and work will be directed and supervised by the Department.

MEDICINE

LUIS GUERRERO, A.B., M.D., Professor of Medicine and Head of Department.

ANTONIO G. SISON, A.B., A.M., M.D., Professor of Medicine.

*—On fellowship leave. Place temporarily occupied by Dr. R. Relova.

RICARDO FERNANDEZ, A.B., M.D., Associate Professor of Physical Therapy.

PERPETUO GUTIERREZ, M.D., Associate Professor of Dermatology and Syphilology.

ELIAS DOMINGO, M.D., Assistant Professor of Neurology and Psychiatry.

PEDRO T. LANTIN, M.D., D.T.M., Assistant Professor of Medicine.

WENCESLAO VITUG, A.B., M.D., Assistant Professor of Medicine.

AGERICO B. M. SISON, A.B., M.D., Non-Resident Instructor in Medicine..

FELIZA DE JESUS, M.D., Non-Resident Instructor in Physical Therapy.

SOTERA TOMANENG, M.D., Associate Non-Resident in Physical Therapy.

PATRICIO IGNACIO, A.B., M.D., Instructor in Medicine and Senior Resident.

JOSE HIZON, A.B., M.D., Assistant in Medicine and Associate Resident.

ANANIAS L. CHAVEZ, M.D., Assistant in Medicine and Junior Resident.

EUGENIO CARLOS, M.D., Assistant in Medicine and Assistant Resident.

CARMELO P. JACINTO, M.D., Assistant in Medicine and Assistant Resident.

GUILLERMO ILANO, M.D., Assistant in Medicine and Assistant Resident.

CATALINO GAVINO, M.D., Professorial Lecturer on Infectious Diseases.

GABRIEL A. BERNARDO, A.B., G.L.S., B.S.L.S., M.A., Lecturer on Library Methods.

Instruction in the Department of Medicine is given from the second semester of the second year to the fifth year of the course, inclusive. With the large variety and abundance of clinical material available in the Philippine General Hospital, didactic lectures are reduced to a minimum as a method of teaching in this department, and instruction is given by ward and dispensary talks, actual bedside work by the students, assigned readings and conference for discussion of the cases studied.

Particular attention is devoted to the etiologic factors and clinical manifestations of diseases which are peculiar to a tropical environment, and to the diagnosis and treatment of tropical diseases encountered in the Philippine Islands.

Clinics are given daily in the wards of the Philippine General Hospital. Clinics on the exanthemata and acute infectious diseases in general are held at the Hospital for Infectious Diseases at San Lazaro. Student Interns are required to attend autopsies of patients that have died in the wards.

1. MEDICAL BIBLIOGRAPHY AND PREPARATION OF ARTICLES FOR PUBLICATION.—Eleven lectures in the first semester of the second year. Total, 11 hours.

Mr. BERNARDO.

A lecture course with assigned reading and problems; medical reference tools; preparation of manuscript; proof reading; study of medical periodicals; documents and society publications; preparation of papers and bibliographies.

2. PHYSICAL DIAGNOSIS.—One lecture and two hours of practical work a week during the second semester of the second year. Total, 48 hours.

Drs. A. G. SISON, W. VITUG, A.B. M. SISON, P. IGNACIO and HIZON.

The course consists of lectures on the principles of physical diagnosis and the general methods of physical examination. In the practical work, the students are grouped in small sections. Each student learns first the normal physical signs on healthy individuals and then he is given practical demonstrations and exercises in eliciting the physical signs of disease.

3. MEDICINE (Third Year).—*Clinical Diagnosis.* One lecture and five hours of practical work in the ward during the first semester. Total, 102 hours.

Drs. A. G. SISON, P. LANTIN, W. VITUG, A. B. M. SISON, P. IGNACIO and J. HIZON.

This part of the course is a continuation of physical diagnosis and including instruction in history taking, the interpretation of symptom and laboratory findings, and the use of the important instruments of precision in medical diagnosis. Special attention is given to the physiological interpretation of symptoms and their analysis in order to impress upon the minds of the students the importance of functional pathology.

Clinical Medicine.—Three lectures including clinical demonstration a week during the year.

Drs. A. G. SISON, GUTIERREZ, and LANTIN.

The instruction consists of lectures on assigned topics and clinical lectures consisting of demonstration with discussion of selected cases by the instructor to a small group of students in the medical ward, Philippine General Hospital. Cases of Typhoid fever are also given much emphasis in the clinical demonstration.

Tropical Medicine.—Two hours a week of lecture during the first semester of the third year. Total, 32 hours.

The course deals with the clinical manifestations of tropical diseases of protozoan, helminthal, bacterial, spirochaetal, fungoid, and nutritional origin, with particular reference to those most prevalent in the Philippine Islands.

The climatology, pathology, treatment and prophylaxis of these affections are also discussed in the lectures which are supplemented by practical demonstrations of cases found in the ward.

Dr. L. GUERRERO.

Clinico-Pathologic Conference.—One hour a week during the third year. Total 33 hours.

Dr. A. G. SISON.

These conferences are given jointly by the Department of Pathology and the clinical departments and consist of a clinical and pathologic discussion of the cases from the Philippine General Hospital that have come to the autopsy.

Therapeutics.—Two lectures a week during the second semester of the third year. Total, 32 hours.

Drs. LANTIN and A. B. M. SISON.

Lectures on the most important drugs that are used in the practice of medicine, including their indications and contraindications, and discussion of the application of the drugs studied to the treatment of diseases.

Infectious Diseases.—One hour a week during the second semester of the third year. This class is held in San Lazaro Hospital.

Dr. GAVINO.

4. *DERMATOLOGY AND SYPHILOLOGY*.—Three hours a week during the second semester of the third year. Total, 48 hours.

Drs. GUTIERREZ and P. IGNACIO.

This course consists of lectures with demonstration of common skin diseases. Special stress is laid on mycotic infections which are usually abundant in this climate. The lectures are supplemented with lantern slide demonstrations of diseases not commonly found in the dispensary. Syphilology is given in the latter part of the course by lectures and practical demonstration of cases in the dispensary. Materials in the venereal clinic of the Philippine Health Service are also utilized. In addition, the students are required to study cases in the Dermatology Clinic of the Dispensary.

5. *MEDICINE (Fourth Year)*.—*Clinical Medicine*. Twelve hours of ward work a week for one semester.

Dr. LUIS GUERRERO and STAFF.

Each student studies carefully a number of cases of which he is required to write complete clinical histories and perform laboratory examinations.

Conferences of the class are held six times a week at which the work done by the students, their findings and interpretations are discussed, approved, or criticized and corrected. Emphasis is laid on the procedure of making medical diagnosis and the application of drugs, dietetics, and other remedies to the treatment of hospital cases.

The students are thus afforded an opportunity to participate to a great degree in their own training.

Dermatology and Syphilology.—Three hours a week. Total, 51 hours.

Drs. GUTIERREZ and P. IGNACIO.

This is a continuation of the course in the third year.

Neurology.—One lecture and two demonstrations a week during the first semester of the fourth year. Total, 51 hours.

Drs. DOMINGO and J. HIZON.

The instruction consists of a brief consideration of the neuroanatomy and neurophysiology in relation to clinical condition and study of cases in the hospital wards or the Free Dispensary with regard to the etiology, symptomatology, treatment and prophylaxis of nervous diseases. The

students are required to read on the diseases presented. Particular reference is made to those nervous diseases which are prevalent in the tropics. It is given at the Philippine General Hospital.

Psychiatry.—One didactic and two clinical hours a week during the second semester of the fourth year. Total, 48 hours.

Dr. DOMINGO

The instruction is mainly devoted to the study of selected psychotic cases at the Insular Psychopathic Hospital, preceded by a brief consideration of normal mental mechanisms and the various types of mental examination; different forms of psychoses, their treatment and other essential points in connection with each case studied. The social problems relative to the insane and the feeble-minded are considered in the discussion of each type of psychosis. The students are also shown the application of hydrotherapy, restraint, seclusion, feeding by tube and other means employed in the management of insane patients at this Hospital.

Roentgenology and Radium Therapy. Two lectures a week during the first semester of the fourth year. Total, 34 hours.

Drs. FERNANDEZ, DE JESUS and TOMANENG.

The instruction includes lectures on the physics of X-rays, clinical aspects of Roentgenology, and the general principles of radium therapy. It also includes practical demonstrations given by the staff of the Department. In addition, students are taught the interpretation of the skiagrams that the Hospital keeps for teaching purposes.

Clinico-Pathologic Conferences.—One hour a week.

Dr. A. G. SISON.

This is a continuation of the work given in the third year.

6. *INTERNSHIP IN MEDICINE.*—An internship of four months in this Department is required of the fifth year students for graduation. This consists of daily ward work, which includes history taking, physical and routine laboratory examinations and subsequent observations of the patients assigned to them, except Sundays and holidays.

They are required to look at the X-ray plates of their patients to consult the X-ray Department about their interpretation. Interns have also daily ward round with the Chief of the department or with the Resident in charge of the ward, and daily clinical conference with the different members of the staff. They are also assigned every morning, by turns, to diagnose and treat patients in the medical clinic of the free dispensary under supervision of a non-resident or a resident member of the Department. In case of death of their patients, Interns are required to attend and report to the Department the corresponding autopsy findings.

Dr. LUIS GUERRERO and STAFF.

SURGERY

JOSE EDUQUE, M.D., Professor of Surgery and Head of Department.

CARMELO REYES, M.D., Professor of Surgery and Gynecology.

ANTONIO DANIEL VAZQUEZ, M.D., B.S., Associate Professor of Surgery.

ANICETO Y. MANDANAS, M.D., Assistant Professor of Surgery.

JANUARIO ESTRADA, M.D., Assistant Professor of Surgery.

JOSE I. ABUEL, M.D., Non-Resident Instructor in Surgery.

CECILIO D. FRANCO, M.D., Non-Resident Instructor in Surgery and Gynecology.

ANDRES T. ZAVALLA, A.B., M.D., Instructor in Surgery and Senior Resident.

FORTUNATO S. GUERRERO, B.S., M.D., Assistant in Surgery and Associate Resident.

EDUARDO M. LESACA, M.D., Assistant in Surgery and Junior Resident.

JOSE R. REYES, M.D., Assistant in Surgery and Assistant Resident.

VICENTE J. CAPISTRANO, M.D., Assistant in Surgery and Assistant Resident.

DELFIN ORDONEZ, M.D., Assistant in Surgery and Assistant Resident.

JAIME LAICO, M.D., Assistant in Surgery and Assistant Resident.

The Department of Surgery offers courses of didactic and practical instruction in general surgery, genito-urinary surgery, and orthopedics to second, third, fourth and fifth year students.

Instruction is given by means of lectures, recitations, conferences, demonstrations, practical work in the laboratory, ward, operating room, dressing room, and dispensary. Lecture-recitations are supplemented with demonstrations at the bedside, amphitheater, or lecture room.

The Philippine General Hospital with its Free Dispensary, the Operative Surgery Building, the Experimental Surgery Pavilion, and the Anatomic and Pathologic Laboratories of the College of Medicine afford excellent facilities for teaching the clinical, the operative and laboratory branches of surgery.

Surgical anatomy is given in the Operative Surgery Building.

Surgical pathology is given in the laboratories of the College of Medicine and in the Hospital.

The course in operative surgery on the cadaver is given in the Operative Surgery Building. The animal work is done in the Experimental Surgery Pavilion.

Clinics are held daily by members of the Department in the Hospital and Dispensary.

The courses are grouped as follows:

Surgery for the Second Year.—Surgical Anatomy, Principles of Surgery, Minor Surgery and Surgical Dispensary.

Surgery for the Third Year.—Surgical Dispensary, Surgical Pathology, Regional Surgery and Surgical Clinic.

Surgery for the Fourth Year.—Genito-Urinary Surgery, Operative Surgery, Orthopedics, Ward Work and Conferences, and Surgical Clinic.

Surgery for the Fifth Year.—Internship.

1. **SURGERY (Second Year).**—*Surgical Anatomy.* Four hours didactic and laboratory work a week during the second semester. Total, 64 hours.

Drs. REYES, C., ESTRADA and FRANCO.

Laboratory work in anatomy with the object of familiarizing the student with the various tissues and organs of the body that have important bearing with surgical diagnosis and treatment. Anatomic charts, models, manikins, special dissections and specimens are used for demonstration in this course, in order to facilitate the dissection to be done by the student on the cadaver. Demonstrations are also made on living subjects, so as to illustrate the surface landmarks of the organ actually involved in disease.

Principles of Surgery.—Two didactic and one clinical hours a week during the second semester. Total, 48 hours.

Drs. MANDANAS, ESTRADA, ABUEL and FRANCO.

Minor Surgery.—Two hours a week during the second semester. Total, 32 hours.

Drs. FRANCO, ZAVALLA and GUERRERO.

Demonstration and practical work in the application of bandages, different kinds of dressings and surgical appliances. The agents used in procuring asepsis and antisepsis are also discussed. First aid treatment of emergency cases such as wounds, hemorrhage, burns, fractures, etc., is shown to the students whenever possible, so that they may apply it afterward under the guidance of the instructor.

Surgical Dispensary.—Total, 32 hours.

Drs. MANDANAS, ESTRADA, ABUEL, FRANCO, GUERRERO, REYES, and CAPISTRANO.

Lectures, recitations, and demonstrations dealing with the fundamentals of surgery, such as infection, hemorrhage, shock, etc.

2. **SURGERY (Third Year)**—*Surgical Dispensary.* Five hours a week during the first semester and two hours a week during the second semester. Total, 134 hours.

First semester: Drs. MANDANAS, ESTRADA, ABUEL, FRANCO, GUERRERO, REYES, J., and CAPISTRANO.

Second semester: Drs. ESTRADA, REYES, J. and CAPISTRANO.

Practical instruction in surgical diagnosis and treatment of minor conditions. Students are allowed to treat patients and assist in minor operations. Given in sections.

Surgical Pathology.—Two hours laboratory work a week during the first semester. Total, 34 hours.

Drs. C. REYES, ESTRADA, and LESACA.

This is a practical work for the purpose of illustrating the pathology of the principal surgical diseases, particular attention being given to the following up of the pathological material in connection with the clinics. Gross and microscopical specimens are demonstrated to the students. The cases from which the specimens are to be removed are previously seen and studied by the students, and the result of histological examination is compared with the clinical diagnosis previously made.

Regional Surgery.—Two didactic and one clinical hours a week during the first semester, and four didactic and two clinical hours a week during the second semester. Total, 127 hours.

First Semester: (Abdomen) Drs. EDUQUE, ZAVALLA and LESACA.

Second semester: (Head and Neck) Drs. REYES, and LESACA.

(Extremities and Chest) Drs. VAZQUEZ, ABUEL,
GUERRERO, and CAPISTRANO.

Lecture-recitations with demonstrations, which consist of a systematic discussion of the surgical diseases of the different regions of the body. The subject of tumors, fractures, and dislocations is included in this course.

The subject matter of the didactic instruction is illustrated in the ward classes by presenting selected cases to the students. The cases are thoroughly discussed with special reference to diagnosis and treatment.

Surgical Clinic.—Two hours a week during the second semester. Total, 32 hours,

Drs. EDUQUE, REYES, and ASSISTANTS.

The cases taken up in this clinic are demonstrated to the students, and the diagnosis and surgical treatment fully discussed before operation. As far as practicable, the operative technic of selected cases is shown step by step during the course of the operation.

3. *SURGERY* (Fourth Year).—*Genito-Urinary Surgery.* One didactic and two clinical hours a week during the first semester. Total, 51 hours.

Drs. EDUQUE, FRANCO, and ZAVALLA.

Lectures or recitations covering the principal diseases of genito-urinary organs including venereal diseases, and practical instruction given in sections in the dispensary in the ward, in order to familiarize the students with the different methods of diagnosis and treatment.

Operative Surgery.—Two laboratory hours a week during the first semester. Total, 34 hours.

Drs. EDUQUE, REYES, ABUEL, and FRANCO.

In this part of the course, students perform operations both on the cadaver and animals. On the cadaver the principal classical operations are performed; while on animals the aim is to develop a good aseptic technic and to familiarize the students with major operative procedures. The student performing the operation attends to the post-operative care of the animal operated upon. Autopsies are made on animals that die from operation in order to determine the exact cause of death.

Orthopedics. One didactic and two clinical hours a week during the second semester. Total, 48 hours.

Drs. VAZQUEZ, GUERRERO, and CAPISTRANO.

This work covers the main affections in the form of didactic and practical instructions. Each week, one hour is devoted to lecture or recitation and two hours to clinical work, which includes practical work in the application of plaster of Paris jackets, casts, splints, etc.

Ward Work and Conferences.—Twelve hours a week for eight weeks in the first or second semester. Total, 96 hours.

Dr. EDUQUE and ASSOCIATES.

Practical instruction is given to a small section of the class. Students work as clinical clerks under the supervision of the resident instructors. They are assigned cases in the wards. They are required to take histories, make physical and laboratory examinations, follow the clinical course of the operated and unoperated cases, and then make observations on the treatment given to the patients. The cases studied are presented at the conference and their complete record read before the class for comment and discussion.

Surgical Clinic.—Four hours a week during the second semester. Total, 64 hours.

Drs. EDUQUE, REYES, and ASSISTANTS.

This is a continuation of the surgical clinic given in the third year. Students taking this work not only view operations, but are also required to administer anaesthetics and assist the operator.

4. *INTERNSHIP IN SURGERY.*—Students are required to take 90 days' internship in this Department.

Dr. EDUQUE and ASSOCIATES.

5. *EXPERIMENTAL SURGERY.*—An elective course open to a limited number of qualified students desiring to do experimental work in surgery.

Dr. EDUQUE.

OBSTETRICS

BALDOMERO ROXAS, A.B., M.D., Professor of Obstetrics and Head of Department.

HONORIA ACOSTA-SISON, M.D., Associate Professor of Obstetrics.

GUILLERMO RUSTIA, L.M., Assistant Professor of Obstetrics.

ANTONIO VILLARAMA, M.D., Assistant Professor of Obstetrics.

ALFREDO BAENS, M.D., Instructor in Obstetrics and Senior Resident.

VICENTE POBLETE, M.D., Assistant in Obstetrics and Associate Resident.

JUAN GALANG, M.D., Assistant in Obstetrics and Junior Resident.

FERNANDO BARICAN, M.D., Assistant in Obstetrics and Assistant Resident.

JOSE MANAHAN, M.D., Assistant in Obstetrics and Assistant Resident.

COURSES

1. *OBSTETRICS (Third Year).*—*Physiological Obstetrics.* Three hours a week during the first semester. Total, 51 hours.

Drs. ROXAS, ACOSTA-SISON, RUSTIA, VILLARAMA, and BAENS.

Lectures, recitations, and demonstrations dealing with the anatomy of the generative organs and of the birth canal; physiology and development of the ovum; physiology of pregnancy; prenatal care; asepsis in obstetrics; physiology and clinical course of labor; special emphasis on the mechanism of labor with exercises on the manikin; postnatal care and changes during the normal puerperium.

Pathological Obstetrics.—Three hours a week during the second semester. Total, 48 hours.

Drs. ROXAS, ACOSTA-SISON, RUSTIA, VILLARAMA, and BAENS.

Lectures, recitations and demonstrations on the pathology or pregnancy, labor and puerperium. The students are shown the technic of operative obstetrics with the use of manikin and cases in the delivery room.

2. *OBSTETRICS (Fourth Year).*—Ward Work. Twelve hours a week for four weeks in the first and second semesters. Total, 96 hours.

This work is a preparation for the intern service in the Department of Obstetrics. Each student is assigned to a number of cases of which he is required to write clinical histories, to perform laboratory examinations and to write daily observations. His work is then presented at the class conference for discussion, criticism and corrections. Each student is detailed on a 24-hour duty in the Philippine General Hospital during which time he is allowed to attend normal cases both inside and outside services. The student is thereby familiarized with the actual practice of obstetric technic in the hospital and in the homes.

3. *INTERNSHIP IN OBSTETRICS.*—28 days of internship in the Department of Obstetrics is required.

PEDIATRICS

JOSE ALBERT, A.B., M.D., Professor of Pediatrics and Head of Department.

ALBERTO TUPAS, M.D., Assistant Professor of Pediatrics.

ALBINO N. OCAMPO, A.B., M.D., Instructor in Pediatrics (Non-Resident).

MOISES B. ABAD, A.B., M.D., Assistant in Pediatrics and Senior Resident.

PEREGRINO H. PAULINO, M.D., Assistant in Pediatrics and Associate Resident.

FLORENCIO N. QUINTOS, M.D., Assistant in Pediatrics and Junior Resident.

JULIAN PAGUYO, M.D., Assistant in Pediatrics and Assistant Resident.

The instruction in this Department is based on fundamental principle that the child is not a mere miniature adult, but has its own independent physiology, pathology and therapeutics.

The courses are arranged to furnish a general survey of the subject through lectures, conferences, recitations, and practical work in the dispensary and wards of the Philippine General Hospital.

The children's ward and the dispensary receive not only the ordinary types of diseases manifested in early life, but also the rarer more complex forms, which are sent in for diagnosis and treatment by physicians and former students. During the last year over 1,316 patients were admitted to the ward and over 7,826 infants and children were cared for and treated in the dispensary.

Students are required to attend autopsies of cases admitted to the ward. Clinics on the exanthematous and contagious diseases are held at the Hospital for Infectious Diseases at San Lazaro.

The schedule of the course has been planned fully to cover the field of Pediatrics, not only from the general standpoint, but also from the pre-

ventive and social as well. Its aim is to prepare scientific and practical practitioners.

COURSES

1. *PEDIATRICS* (Third Year).—*Principles of Pediatrics*. Growth and development: exudative, neuropathic, and spasmophilic constitutions; status lymphaticus, one hour a week during the first semester. Total, 17 hours.

Dr. TUPAS.

Infant Hygiene and Infant Feeding.—Conferences with demonstrations on infant hygiene, nutrition, and feeding. The application of preventive medicine to children is also discussed in the course. Two hours a week during the first semester. Total, 34 hours.

Dr. TUPAS.

Conferences and Quizzes on:

- (a) The diseases of the ductless glands.
- (b) Idiotism.
- (c) Diplegia spastica.
- (d) Congenital heart diseases.
- (e) Gastro intestinal and uro-genital malformations.
- (f) Convulsive disorders.
 - (1) Eclampsia.
 - (2) Tetany.
- (g) Scurvy.
- (h) Rickets.

One hour a week during the second semester. Total, 16 hours.

Dr. OCAMPO.

Conferences and Quizzes on:

- (1) Diseases of the newborn.
- (2) Blood diseases.
- (3) Interpretation of:
 - (a) Crying.
 - (b) Vomiting.
 - (c) Stools.
 - (d) Meningism.
 - (e) Fever.
 - (f) Edema.
 - (g) Drowsiness.
 - (h) Paralysis.
- (4) History taking.

Two hours a week during the second semester. Total, 32 hours.

Dr. TUPAS.

2. *PEDIATRICS* (Fourth Year).—*Infectious Diseases:*

- (1) Exanthematas.
- (2) Whooping cough.
- (2) Diphtheria.
- (4) Typhoid.
- (5) Malaria.
- (6) Meningitis.
- (7) Poliomyelites.
- (8) Rheumatism.

(9) Tuberculosis.

(10) Syphilis.

Two hours a week during the first semester. Total, 34 hours.

Drs. ALBERT, GABINO, and OCAMPO.

Conferences on:

(1) Nutritional disturbances.

(2) Skin diseases.

(3) Bronchopneumonia.

(4) Empyema.

(5) Infantile beriberi.

(6) Therapeutics in children.

(7) Social Pediatrics (Child Welfare).

Three hours a week during the second semester. Total, 48 hours.

Drs. ALBERT and OCAMPO.

Students are given practical work on Sunday meetings of the "Little Mother's League," in the dispensary of the Philippine General Hospital.

Clinical Clerkship.— Twelve hours a week for four weeks in the first and second semester, one hour in the ward and one hour in the dispensary clinic.

Dr. ALBERT and ASSISTANTS.

In this part of the course each student is assigned to a number of cases in the ward which he studies carefully, making clinical history, laboratory examinations, lumbar punctures, thoracentesis and intravenous injections under supervision.

3. *INTERNSHIP IN PEDIATRICS.*—The interns are given practical work in the Pediatrics Ward to prepare them for their future practice. In this work emphasis is laid on the making of history, clinical observation, laboratory works and treatment. They are allowed to order, prescribe, perform thoracentesis, paracentesis, lumbar puncture, hypodermoclysis, proctoclysis and intraperitoneal, intravenous, intramuscular and hypodermic injections. They are taught how to apply mustard plaster, mustard pack, bran bath, and jacket compress. They are also shown how to perform Von Pirquet, Mantoux test, how to prepare protein milk, butter milk and other mixtures for infant feeding. In the dispensary of the Philippine General Hospital they are taught how to take care and treat non-hospital patients, all their works are closely supervised by the senior members of the staff.

The interns must provide themselves with a notebook in which they write the summary of their histories and the abstracts of medical literature.

Dr. ALBERT and ASSISTANTS.

ELECTIVE COURSES

4. *GRADUATE COURSES.*—More advanced than the courses required for the degree of M.D. are offered to properly qualified students. The department will arrange two types of courses to meet the needs of the students.

(a) For general practitioners who are constantly called upon to treat infants and children, and who desire to improve their general knowledge of pediatrics and to study recent advances in the subject.

(b) For those wishing more detailed instructions and are qualified to undertake special investigations, and those interested in Social Pediatric Work (Child Welfare).

Students will have access to the ward and dispensary when accompanied by one member of the staff. The plan and the details of these courses must be arranged by personal interview with the Head of the Department.

OPHTHALMOLOGY, OTOTOLOGY, RHINOLOGY, AND LARYNGOLOGY

ARISTEO R. UBALDO, A.B., L.M., Professor of Ophthalmology, Otology, Rhinology and Laryngology.

HERMINIO VELARDE, M.D., Associate Professor of Ophthalmology, Otology, Rhinology and Laryngology.

ANTONIO S. FERNANDO, A.B., M.D., Assistant Professor of Ophthalmology, Otology, Rhinology and Laryngology.

VIVENCIO C. ALCANTARA, A.B., M.D., Instructor in Ophthalmology, Otology, Rhinology and Laryngology (non-Resident).

CONRADO D. AYUYAO, M.D., Instructor in Ophthalmology, Otology, Rhinology and Laryngology and Senior Resident.

FLORENTINO BUENDIA, A.B., M.D., Assistant in Ophthalmology, Otology, Rhinology and Laryngology and Associate Resident.

TOMAS R. ILANO, M.D., Assistant in Ophthalmology, Otology, Rhinology and Laryngology and Junior Resident.

CESAR MALOLES, M.D., Assistant in Ophthalmology, Otology, Rhinology, and Laryngology and Assistant Resident.

The instruction of the Department of Ophthalmology, Otology, Rhinology and Laryngology is given from the second semester of the third year to the fifth year or internship year inclusive. The numerous cases in the wards and free dispensary clinic of the Philippine General Hospital are freely used whenever necessary to illustrate the subject matters of the course. The entire course is divided into two main parts: (1) lecture course which is given entirely to the third year, second semester, and (2) clinical course which is given to the fourth year and the internship year.

1. *OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY (Third Year).*—*Ophthalmology I.* One hour a week in the second semester. Total, 17 hours.

Drs. UBALDO and AYUYAO.

This course consists of lectures and recitations on the common diseases of the eye and their treatment. In the beginning of the course a general consideration of the anatomy and physiology of the eye is given.

Ophthalmology II.—One hour a week in the second semester. Total, 17 hours.

Dr. AYUYAO and ASSISTANT.

This course consists of lectures and recitations on the principles of optics; common errors of refraction and their correction; retinoscopy; ophthalmoscopy and perimetry. Muscular imbalance including phorome-

try, the common diseases of the retina, choroid, optic nerve and vitreous are also included.

Otology.—One hour a week in the second semester. Total, 17 hours.

Dr. FERNANDO and ASSISTANT.

This course consists of lectures and recitations on the anatomy, physiology and common diseases of the ear including that of the mastoid. The different tests for hearing and equilibrium are given.

Rhinology.—One hour a week in the second semester. Total, 17 hours.

Drs. VELARDE and ALCANTARA.

This course consists of lectures and recitations on the common diseases of the nose and its accessory sinuses. In the beginning of the course a general consideration of the anatomy and physiology is given. Some phase in the history of rhinology is touched.

Laryngology.—One hour a week in the second semester. Total, 17 hours.

Drs. VELARDE and ALCANTARA.

This course consists of lectures and recitations on the anatomy, physiology and common diseases of the pharynx and larynx. It also includes that of the oesophagus and the upper parts of the bronchial tree.

2. OPHTHALMOLOGY AND OTORHINOLARYNGOLOGY (*Fourth Year*).—*Eye, Ear, Nose, and Throat Clinics*. Three hours a week in the first semester and two hours a week in the second semester. Total, 82 hours.

Drs. UBALDO, VELARDE, FERNANDO, AYUYAO, and ASSISTANTS.

The class is divided into four sections. The students are taught the principles and methods of physical and clinical examinations of the eye, ear, nose and throat, and their diseases. This part is given in the first semester. In the second semester clinical conferences and demonstrations as well as operative clinics are given. The classes are assigned to the different instructors by rotations.

3. INTERNSHIP IN OPHTHALMOLOGY, OTOLOGY, RHINOLOGY AND LARYNGOLOGY.—*The fifth year students or interns are required to serve 28 days in the Department*. They prepare the clinical records including the laboratory examinations of the patients assigned to them under immediate supervision of the Residents of the Department. They are taught the routine examination, care and treatment of the patients of the Department. They are made assistants during the operative clinics. Clinical conferences are given three times a week by the senior members of the department. They are made to attend the meetings of the Staff of the Department (Journal Club).

Drs. UBALDO, VELARDE, FERNANDO, ALCANTARA and ASSISTANTS.

GYNECOLOGY

FERNANDO CALDERON, A.B., M.D., Professor of Gynecology and Head of Department.¹

CARMELO REYES, M.D., Professor of Surgery and Gynecology and Acting Head of Department.

¹ On special detail abroad.

MARIANO TOLENTINO, M.D., Associate Professor of Gynecology.
 HONORIA ACOSTA-SISON, M.D., Associate Professor of Obstetrics.
 ANICETO Y. MANDANAS, M.D., Assistant Professor of Surgery.
 CECILIO D. FRANCO, M.D., Instructor in Surgery and Gynecology.

The courses offered in this department extend throughout the third, fourth and fifth years. The required subjects are: principles of gynecology and gynecologic dispensary clinics in the third year; gynecologic operative clinics and ward work in the fourth year; and internship in the fifth year. These courses are given in the form of lectures, recitations, demonstrations, and practical work in the College and in the Philippine General Hospital.

1. *GYNECOLOGY* (Third Year).—*Gynecology*. Four hours a week during the first half of the second semester (from October to January). Total, 32 hours. Lectures, illustrated with lantern slides, recitations and demonstrations covering the principles and practice of gynecology in general.

Drs. REYES and TOLENTINO

Dispensary Clinics.—Demonstration and discussion of cases; practical work in pelvic examinations; diagnoses and non-operative treatments of gynecologic conditions. Given in sections during the latter half of the second semester (from January to March). Each student attends 10 sessions.

Dr. TOLENTINO.

2. *GYNECOLOGY* (Fourth Year).—*Gynecologic Operative Clinics*. Two hours a week during the first semester. Total, 32 hours. This course is given in the operating room of the Philippine General Hospital.

Dr. REYES and ASSISTANTS.

Ward Work.—Given in sections. The students are given cases in the hospital for which they are required to write histories and make all necessary examinations and observations. Each student works daily for two weeks in the ward and must complete not less than 4 cases.

Dr. REYES and ASSISTANTS.

3. *GYNECOLOGY* (Fifth Year Internship).—One month of intern work in the Philippine General Hospital.

Dr. REYES and ASSISTANTS.

LEGAL MEDICINE

SIXTO DE LOS ANGELES, A.B., L.M., Professor of Legal Medicine and Head of the Department.

ANASTACIA VILLEGAS, A.B., M.D., Assistant Professor of Legal Medicine.

PABLO ANZURES, A.B., M.D., Instructor in Legal Medicine.

The Department of Legal Medicine is in charge of the instruction on medico-legal matters to senior students of the College of Law, fourth year medical and third year students of the Schools of Pharmacy and Nursing. Its teaching functions and research work for the University of the Philippines are so arranged as to correlate with and take advantage of the activities, services and investigations undertaken for the Department of Justice in accordance with the provisions of Act No. 3043.

To the fourth year medical students, the Department gives a total of eighty-two (82) hours' course of didactic and practical instruction on Medical Jurisprudence, Forensic Medicine, Medical Economics and Ethics and History of Medicine. Instruction is given with the purpose of preparing the medical students to become, not specialists in any branch of legal medicine, but culturally and adequately trained along this line, so as to enable them to understand the subject sufficiently and to solve the corresponding medico-legal problems with which they are likely to be confronted in their daily practice, and to acquaint them with their professional duties and rights as well as with their responsibilities before the law and the administration of justice.

UNDERGRADUATE COURSES FOR MEDICAL STUDENTS

1. *LEGAL MEDICINE* (Fourth Year).—*Forensic Medicine* (Didactic). Two hours a week during the first semester. Total, 34 hours.

This part of the course consists of lectures and demonstrations, covering mainly the following subjects:

- (1) Médico-legal aspects of death and the médico-legal examination of the dead body.
- (2) The medico-legal features of physical injuries, such as those related to wounds, thermal and electrical injuries, starvation, the violent interference with the process of respiration and the state of unconsciousness.
- (3) Questions relative to sexual status and functions, sexual disabilities and sexual crimes.
- (4) Medico-legal relations of pregnancy, delivery, legitimacy and civil personality.
- (5) Criminal abortion, birth control, and infanticide.
- (6) Questions on medico-legal identification and medico-legal examinations of blood and different stains.
- (7) Psychiatry in its medico-legal relations.
- (8) Criminal anthropology.
- (9) Forensic toxicology.

2. *LEGAL MEDICINE*.—*Practical Course*. Two hours a week during the second semester. Total, 32 hours.

Drs. DE LOS ANGELES, VILLEGAS and ANZURES.

This part of the course consists of laboratory work supplemented by lectures and conferences with practical demonstrations designed to give the médico-legal students practical training in the general subjects of legal medicine, including medico-legal autopsies, preparation of medico-legal protocols and reports, laboratory examinations of medico-legal specimens and forensic toxicological investigations on actual cases and on laboratory animals. Special procedures are followed in the respective technics used to meet the peculiarities of the medico-legal problems involved, so as to enable the students to give practical medico-legal interpretations of facts and results obtained from the cases referred to the department by the City Fiscal's Office, the City Department of Police, the Bureau of Constabulary, the Bureau of Labor, the Bilibid Prison, the Philippine General Hospital, the City Morgue, etc.

Under the supervision of the Department of Legal Medicine and by special arrangement with the Clinical Departments concerned in the Philippine General Hospital, the students are given opportunity to observe and follow interesting medico-legal cases from their confinement in the Hospital until death or recovery, or until they are disposed of finally in the courts. Upon the request of the Head of the Department, the students may be excused in rotation from other subjects to study and report on interesting medico-legal cases which are accessible only at hours other than those scheduled for the course in legal medicine.

During this course conferences are regularly held once a month in conjunction with the medico-legal students of the fourth year class of the College of Law. The aim is to give them practical training in the conduct of judicial investigations on medico-legal cases in the form of trial practice, through special arrangement with the College of Law.

3. MEDICAL JURISPRUDENCE, ECONOMICS, ETHICS AND HISTORY OF MEDICINE.—One hour a week during the second semester. Total, 16 hours.

Drs. DE LOS ANGELES and VILLEGAS.

This part of the course consists of lectures which embrace, as far as possible, the following subjects:

- (1) Relation of medicine to law in general.
- (2) Legislative regulation of the practice of medicine.
- (3) Contractual relation of the medical profession and the legal responsibilities and duties of physicians.
- (4) Medical malpractice.
- (5) Right of physicians to compensation.
- (6) Medical evidence, methods of judicial investigations and procedure in courts of justice.
- (7) The legal aspects of public health service and the official positions of physicians.
- (8) Médico-legal relations of wills and life insurance.
- (9) Medical economics and ethics.
- (10) History of medicine.

Textbooks: (For the whole course.) Angeles, Sixto de los, *Legal Medicine*, with reference to the Philippine Law and the Reports of the Philippine Supreme Court; Bradford & Roth, *History of Medicine*.

Collateral readings: Thoinot, L., "*Tratado de Medicina Legal*"; Withaus and Becker, "*Medical Jurisprudence, Forensic Medicine, and Toxicology*"; Angeles, S. de los, "*Estudios sobre Antropología Criminal en las Islas Filipinas*," Relly, T.F., "*Building of a Profitable Practice*"; Cathell, "*The Physician Himself*."

GRADUATE COURSE

ADVANCED COURSE IN LEGAL MEDICINE.—One hour didactic and two laboratory hours a week during the second semester. Total, 12-48 hours, depending upon the needs of the applicant.

This is an advanced didactic and laboratory course in legal medicine, including criminal anthropology, designed to give more detailed and spe-

cialized training to graduates who wish to have a greater familiarity with or to improve their general knowledge of legal medicine so as to fit them for the duties demanded of a médico-legal expert.

In this connection each student is required to submit at the end of the course a thesis based upon his own original investigation or research on any branch of the subject. The thesis must be accompanied by an accurate description of the technic followed and exact reference to publications quoted so that due verification may be facilitated. It must be of such a character as to be of credit to the Department of Legal Medicine if published. In this way, it is intended to impress upon the students the methods of investigation and the most important facts in the various divisions of the subject, as well as to guide those who are specially interested along a definite line of inquiry. Every facility will be afforded those who are taking this course and making special research work on any branch of the subject.

Drs. DE LOS ANGELES, VILLEGAS and ANZURES.

The School of Pharmacy

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.
Dean of the College of Medicine: Dr. FERNANDO CALDERON.¹
Dean of the College of Medicine: Dr. SIXTO DE LOS ANGELES (Acting).
Director of the School: Dr. MARIANO V. DEL ROSARIO.
Secretary of the School: Dr. PATROCINIO VALENZUELA.

HEADS OF DEPARTMENTS

Pharmaceutical Chemistry (Tel. 54248): Dr. MARIANO V. DEL ROSARIO
Pharmacy (Tel. 54248 and 56991, Local 17): Dr. FELIX HOCSON.
Bacteriology (Tel. 54117): Dr. LIBORIO GOMEZ.
Botany (Tel. 56921, Local 34): Dr. JOSE K. SANTOS.
Chemistry (Tel. 56921, Local 42): Dr. AMANDO CLEMENTE.
Economics (Tel. 56921, Local 43): Prof. CONRADO BENITEZ.
English (Tel. 56921, Local 52): Prof. ROBERT J. CONKLIN.
Geology (Tel. 56921, Local): Dr. JOSE M. FELICIANO.
Hygiene (Tel. 57227 and 56406): Dr. HILARIO LARA.
Legal Medicine (Tel. 54136): Dr. SIXTO DE LOS ANGELES.
Library Science (Tel. 56921, Local 24): Prof. GABRIEL BERNARDO.
Mathematics (Tel. 56921, Local 17): Dr. VIDAL A. TAN.
Military Science and Tactics (Tel. 56921, Local 37): Capt. FIDEL V. SEGUNDO.
Modern Languages (Tel. 56921, Local 57): Prof. EMILIO NATIVIDAD.
Pharmacology (Tel. 54231): Dr. DANIEL DE LA PAZ.
Physical Education (Tel. 56921, Local 30): Prof. CANDIDO BARTOLOME (Acting).
Physics (Tel. 56921, Local 19): Dr. GEORGE B. OBEAR.
Physiology and Biochemistry (Tel. 54132): Dr. ISABELO CONCEPCION.
Spanish (Tel. 56921, Local 36): Prof. JAYME C. DE VEYRA.
Zoölogy (Tel. 56921, Local 33): Dr. HILARIO ROXAS.¹
Zoölogy (Tel. 56921, Local 33): Dr. LEOPOLDO CLEMENTE (Acting).

CHAIRMAN OF STANDING COMMITTEES

Admission: Dr. MARIANO V. DEL ROSARIO (Tel. 54248)
Standing and Promotion: Dr. PATROCINIO VALENZUELA (Tel. 54248)
Catalogue and Curriculum: Dr. ALFREDO C. SANTOS (Tel. 54248)
Graduate Studies: Dr. PATROCINIO VALENZUELA (Tel. 54248)

BUSINESS DIRECTORY

OFFICE OF THE DIRECTOR, The office of the Director is located on the third floor of the Medical Annex Building, Herran Street. (Tel. 54248)

CORRESPONDENCE: Address all correspondence to the Director, School of Pharmacy, Manila, P. I.

¹ On leave.

MARIANO V. DEL ROSARIO, M.S. (Chicago), Phar.D. (Madrid),
M.D. (Sto. Tomas) ¹

Director, Professor and Head of the Department of Pharmaceutical Chemistry.

SIXTO DE LOS ANGELES, A.B., M.D. (Sto. Tomas)

Professor, Acting Dean, College of Medicine, and Head of the Department of Legal Medicine

CONRADO BENITEZ, LL.B. (U. P.)², M.A. (Chicago)

Professor and Head of the Department of Economics and Business Administration.

EMILIO BULATAO, M.D. (U. P.)

Professor of Physiology.

AMANDO CLEMENTE, Ph.D. (Chicago)

Professor and Head of the Department of Chemistry.

ISABELO CONCEPCION, M.D. (U. P.)

Professor and Head of the Department of Physiology and Biochemistry.

ROBERT J. CONKLIN, M.A. (Columbia)

Professor and Head of the Department of English.

FAUSTINO GARCIA, M.D. (U. P.)

Professor of Pharmacology

LIBORIO GOMEZ, M.D., Ph.D. (Chicago)

Professor and Head of the Department of Pathology and Bacteriology.

FELIX HOCSON, Ph.C. (Michigan), Phar.D. (Sto. Tomas), D.D.S. (Philip.
Dent. Coll.)

Professor and Head of the Department of Pharmacy.

HILARIO LARA, M.D. (U. P.), Dr.P.H. (Johns Hopkins)

Professor and Head of the Department of Hygiene.

WALFRIDO DE LEON, M.D. (U. P.), D.T.M. (U. P.)

Professor and Head, Department of Sanitary Bacteriology and Immunology.

GEORGE B. OBEAR, Ph.D. (Brown)

Professor and Head of the Department of Physics.

DANIEL DE LA PAZ, M.D. (Illinois)

Professor and Head of the Department of Pharmacology.

JOSE I. DEL ROSARIO, Lic.Pharm. (Sto. Tomas), M.S. (Chicago)

Professor of Chemistry.

FIDEL V. SEGUNDO, Captain (P.S.)

Professor and Head, Department of Military Science and Tactics.

VIDAL A. TAN, C.E. (Cornell), Ph.D., (Chicago)

Professor and Head of the Department of Mathematics.

JAYME C. DE VEYRA, A.B. (Letran)

Professor and Head of the Department of Spanish.

CANDIDO AFRICA, M.D. (U. P.), D.T.M. and H. (London)

Associate Professor and Acting Head, Department of Parasitology.

¹ University of Sto. Tomas.

² University of the Philippines.

- GABRIEL BERNARDO, G.L.S. (Wisconsin), M.S. (U. P.)
Associate Professor and Head of the Department of Library Science.
- AMPARO CONCHA-BRILLANTES, M.D. (U. P.)
Associate Professor of Hygiene.
- JOSE M. FELICIANO, Ph.D. (Chicago)
Associate Professor and Head of the Department of Geology.
- ROMULO GUEVARA, M.D. (U. P.)
Associate Professor of Pharmacology.
- LAMBERTO LEIVA, M.D. (U. P.), D.T.M. (Harvard)
Associate Professor of Parasitology.
- EMILIO NATIVIDAD, B.S.Agr. (Zürich)
Associate Professor and Acting Head of the Department of Modern Languages.
- HILARIO ROXAS, Ph.D. (Chicago)
Associate Professor and Acting Head of the Department of Zoology.
- JOSE K. SANTOS, Ph.D. (Chicago)
Associate Professor and Head of the Department of Botany.
- PATROCINIO VALENZUELA, Ph.D. (Wisconsin)
Associate Professor of Pharmacy.
- CANDIDO C. BARTOLOME, M.A. (U. P.), M.P.E. (Springfield)
Assistant Professor and Acting Head of the Department of Physical Education.
- ANGELA B. DE LA CANTERA, A.B. (U. P.)
Assistant Professor of French.
- LEOPOLDO CLEMENTE, Ph.D. (Chicago)
Assistant Professor of Zoölogy.
- LUIS GONZAGA, M.S. (U. P.)
Assistant Professor of Chemistry.
- PILAR PEREZ HERRERA, Ph.D. (Columbia)
Assistant Professor of Chemistry.
- PABLO I. DE JESUS, M.D. (U. P.), Dr.P.H. (M. I. T.)
Assistant Professor and Acting Head, Department of Sanitary Engineering, Industrial Physiology and Chemistry.
- CECILIO LOPEZ, Ph.D. (Hamburg)
Assistant Professor and Acting Head, Department of Oriental Languages.
- AGUSTIN LLENADO, Ph.D. (Saria)
Assistant Professor of Modern Languages.
- REGINO J. NAVARRO, M.D. (Illinois)
Assistant Professor of Pathology and Bacteriology.
- WENCESLAO PASCUAL, M.D. (U.P.)
Assistant Professor of Physiology.
- MARIA D. PASTRANA, Ph.D. (Michigan)
Assistant Professor of Botany.
- ISIDORO SANIEL, H.S.T.C. (U. P.), B.S.E., B.L.S. (N. Y. S.)
Assistant Professor of Library Science.
- ALFREDO C. SANTOS, Ph.D. (Münster)
Assistant Professor of Pharmaceutical Chemistry.

ANASTACIA VILLEGAS, M.D. (U.P.)

Assistant Professor of Legal Medicine.

BENJAMIN BARRERA, M.D. (U.P.)

Instructor in Pathology and Bacteriology.

SALUD CAMPOS-DEL ROSARIO, B.S. (U. P.), Phar.D. (Sto. Tomas)

Instructor in Pharmacy

TOMAS M. GAN, M.D. (U.P.)

Instructor in Hygiene

EUGENIA INCO-CAPARAS, B.S. (U.P.)

Instructor in Botany.

GREGORIO LANTIN, M.D. (U.P.)

Instructor in Hygiene

MARIANO OCAMPO, M.S. (U. P.)

Instructor in Biochemistry

LAURO PANGANIBAN, M.D. (U. P.)

Instructor in Pharmacology

JOSE PATERNO, B.S. (U.P.)

Instructor in French

ALFREDO PIO DE RODA, M.D. (U. P.)¹

Instructor in Hygiene.

PURA SANTILLAN, M.S. (U. P.)¹

Instructor in French.

FELIX V. SANTOS, Ph.D. (Chicago)

Instructor in Zoölogy

MARIA TOLENTINO-VALLARTA, B.S. (U. P.)

Instructor in Botany.

ARTEMIO TULIO, B.S.C. (U. P.)

Instructor in Accounting.

AMADO FELICIANO, D.V.M., M.S. (U. P.)

Assistant in Zoölogy.

VICENTE LIMSON, Ph.C. (U. P.)

Assistant in Biochemistry.

FLORENCIO A. MEDINA, B.S. (U. P.)

Assistant in Chemistry.

ADELAIDA T. ORETA, M.S. (U. P.)

Assistant in Chemistry.

CONSORCIA PANGANIBAN, B.S. (U. P.)

Assistant in Chemistry.

GUILLERMO QUIBILAN, Ph.C. (Oregon State) B.S. (U. P.)

Assistant in Pharmaceutical Chemistry.

JOSEFINA RAMOS, B.S. (U. P.), Phar.D. (Sto. Tomas)

Assistant in Pharmacy.

FELICIANA REYES, M.S. (U. P.)

Assistant in Pharmaceutical Chemistry.

JUAN S. TEVES, B.S. (U. P.)

Assistant in Geology.

ELPIDIO C. VERA, B.S. (U. P.)

Assistant in Chemistry.

¹On leave.

THE SCHOOL OF PHARMACY

HISTORY

The School of Pharmacy, organized during the year 1914, had its beginning within the University, as a logical outgrowth of the course in pharmacy instituted under the administrative control of the College of Liberal Arts, June 5, 1911.

In 1910, upon the recommendation of the President of the University, a committee was appointed by the Board of Regents for the purpose of determining the efficiency of the instruction in pharmacy as given by the then existing schools and colleges in the Philippine Islands and for the purpose of deciding upon the feasibility of giving such instruction at the University of the Philippines. As a result of the report of this committee, the Board of Regents appropriated the sum of ₱18,000 for the purchase of additional equipment and materials necessary to the offering of a modern course in pharmacy.

During the school year of 1911-12, the first year when instruction in pharmacy was given at the University, there were 32 students enrolled in the course. In following years, this number has gradually increased. It was for the purpose of meeting the needs of its growing student body as well as for better coordination of instruction that the Board of Regents on February 12, 1914, upon recommendation of the President of the University, authorized the establishment of the School of Pharmacy as a part of the College of Medicine. The Dean of the College of Medicine acting upon the advice of the intramural committee and sanctioned by the Board of Regents has created an independent faculty for the school to act on matters of academic character.

With the transfer of the management of the Department of Pharmacy of the Philippine General Hospital to the School of Pharmacy, on July 16, 1914, pharmaceutical instruction in the University received a stimulus, and its field of activity and usefulness was very considerably enlarged.

The large number of prescriptions filled and galenical preparations manufactured in the Department of Pharmacy to supply the needs of the different wards of the Philippine General Hospital as well as the numerous patients from the various clinics at the free dispensary offers excellent opportunities to the pharmacy students in their drug store practice. During the year 1931, the department dispensed 118,976 prescriptions and manufactured 6,693 pharmaceutical preparations.

AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

The School of Pharmacy is a member of this Association since 1917. The American Association of Colleges of Pharmacy is an organization established for the purpose of promoting the high ideals and standards of Pharmacy, as a profession, through pharmaceutical education.

In 1917 the Association adopted a resolution that a four-year high school entrance requirement become binding upon the schools of the Association on and after September 1, 1923. This School has adopted this entrance requirement since its establishment in 1911. Furthermore, the three-year

has always been the minimum course offered by the School since its foundation.

THE FAIRCHILD SCHOLARSHIP

Mr. Samuel Fairchild, of New York, offers annually a scholarship amounting to \$500 in cash to be awarded on the basis of a competitive examination to candidates who are graduates of accredited colleges or schools of pharmacy holding membership to the American Association of Colleges of Pharmacy. Each college or school is allowed and limited to two candidates. The examinations will be held annually at the University on the second monday in June.

PHARMACEUTICAL CHEMIST

This School has offered since its establishment a three-year course in Pharmacy. As this course is equivalent to that leading to the degree of Pharmaceutical Chemist given in other schools, the degree of Graduate in Pharmacy formerly conferred on the students on the completion of this course, was changed to the degree of Pharmaceutical Chemist in 1921 by action of the Board of Regents. All the students enrolled previous to June 1930 may receive the degree of Pharmaceutical Chemist after completing the three-year course.

FOUR-YEAR MINIMUM COURSE

The four-year course leading to the degree of Bachelor of Science in Pharmacy is now the minimum course offered in schools holding membership in the American Association of Colleges of Pharmacy. In Ohio State University College of Pharmacy, University of Minnesota College of Pharmacy, University of Nebraska College of Pharmacy, the University of Notre Dame Department of Pharmacy, University of Washington College of Pharmacy, State College of Washington School of Pharmacy, Oregon Agricultural College School of Pharmacy, North Pacific College of Oregon School of Pharmacy, Indianapolis College of Pharmacy, Purdue University School of Pharmacy, and Valparaiso University College of Pharmacy, the four-year course has been offered as the minimum since September 1930 or earlier.

By virtue of Act No. 3536, the four-year minimum course in pharmacy has been offered in all the Schools of Pharmacy in the Philippines beginning the academic year 1930-1931.

Act No. 3536 requires that all candidates for examination in the Board of Pharmaceutical Examiners and Inspectors beginning July, 1934 should be graduates of a legally chartered institution in which pharmacy is taught for a period not less than four years of nine months' course each.

GRADUATE WORK

The degree of Master of Science (M.S.) with pharmacy or pharmaceutical chemistry major will be conferred upon any graduate of the four-year course in pharmacy from the University of the Philippines or another University of high standard, upon completion of at least one year

of graduate work in the School of Pharmacy. For the details of the requirements, the applicant is referred to the rules of the University Council regarding graduate study.

SPECIAL COURSE

Graduate students in pharmacy desiring to take special courses in dispensing, manufacturing, plant chemistry, etc., will be admitted at any time upon application to the Director of the School of Pharmacy. Such courses do not lead to any degree. A University certificate of attendance will be given those special students who have completed in a satisfactory manner twenty-four or more weeks of graduate instruction.

PHILIPPINE ISLANDS LAW FOR THE PRACTICE OF PHARMACY

The Board of Pharmaceutical Examiners and Inspectors, created by Act No. 2711, is the body authorized to grant licenses for the practice of pharmacy in the Philippine Islands.

OPPORTUNITIES FOR OUR GRADUATES

A glance over the curriculum of our school shows several professional positions open to the graduates of this School. If it is true that pharmacy is a sister science to medicine, then the work of the practitioner of the profession should not be confined solely to the filling of prescriptions and the selling of drugs but also to the phases of work assumed by the public analysts and experts, food and drug chemists, laboratory technicians in hospitals, and so forth. To this end, all efforts have been made to provide our students with a well-balanced course. Among the numerous opportunities which are offered to our graduates, the following may be enumerated:

(a) Chemical and microscopical analysis essential in the diagnosis of diseases.

(b) Drug assay and analysis of food, water, etc. In this connection it is gratifying to mention that, after six months of training in this work in the Bureau of Science, some of our graduates have filled important positions in that Bureau, and in recognition of their service a number of them have been sent as University or Government Fellows in the United States to pursue some special or technical courses, such as plant chemistry, organic chemistry, sugar technology, mining, geology, botany, etc. These students have shown remarkable ability in their postgraduate studies abroad as many of them are now on active duty in the government service after obtaining higher degrees, such as master of science and doctor of philosophy, in first-class universities in Europe and the United States.

(c) To teach science in high schools or in higher educational institutions.

ADMISSION REQUIREMENTS

Applicants seeking admission to this school must be graduates of a standard four-year high school recognized by the Secretary of Public Instruction, or must have completed an equivalent education calling for at least 16 units of credit in the following high school subjects:

	<i>Units</i>
English	5
History	2
Mathematics	2½
Biology	1
Physics or Chemistry	1
<hr/>	
Total	11½

To make up the total number of units required for entrance, history, government, botany, zoology, chemistry, mathematics, language, literature, economics, general science, geography, psychology, pedagogy, agriculture, bookkeeping, business law, domestic science, drawing, manual training, or music may be offered.

Besides the foregoing entrance requirements, new students must take entrance tests Type A consisting of the following high school subjects:

	<i>Weight</i>
English and Composition	200
Mathematics	100
History	100
Physics	100
Biology	100
Intelligence Test	100
<hr/>	
Total	700

By virtue of a resolution adopted by the University Council at the meeting held on January 9, 1932, the giving of the test as a requirement for entrance to this school was suspended for the academic year 1932-1933.

All new students seeking admission to this school must file with the Registrar's office a transcript of their high school record on or before May 15, 1932. U. P. Forms Nos. 1 and 3, copies of which may be secured from the Registrar's office, should be filled in for this purpose.

All entrance deficiencies must be made up within one year.

ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing must meet the following requirements:

1. Submit evidence of their previous studies satisfactory to the faculty.
2. Pass an examination in each subject, or its equivalent, in the pharmacy course completed by the students of the class which they desire to enter.
3. They must have studied, as matriculated pharmacy students, in an approved school or college of pharmacy for a period of time at least equal to that already spent by the class which they seek to enter.

Candidates for graduation on advanced credit must complete at least the last two years of their studies in this school unless permission for different arrangement has been obtained from the faculty.

4. Candidates will be admitted to examinations for advanced standing only upon special authority granted by the faculty. Applications for advanced credit, U. P. Form 44, shall be made to the Registrar or to the

Director of the School not later than July 15 after matriculation. Upon receipt of an application, the deans shall cause the proper department head to examine the applicant or applicants. This examination shall be held on or before July 31, and its result shall be reported to the dean and the registrar not later than August 1 of the same year.

SPECIAL STUDENTS

Persons over 20 years of age may, under certain circumstances, even without satisfying the entrance requirements, be admitted as special students not candidates for a degree. The applicants must give evidence of ability to do creditable work and their applications for admissions must be approved by the departments concerned and the Director of the School.

Special students shall not be permitted to enroll for more than two years except by permission of the Director.

Special students who are admitted without satisfying the entrance requirements but who subsequently satisfy such requirements may attain the standing of regular students. College subjects taken in the University proper shall not be used to satisfy the entrance requirements.

Special students are subject to the fees and regulations prescribed for regular students and must take at least nine credit hours per week of classroom or laboratory work.

EXAMINATIONS

Examinations will be held at the end of each semester upon the completion of each subject.

Conditions in subjects in pharmacy must be removed in accordance with the rules and regulations of the University.

RULES GOVERNING SCHOLARSHIP, PROMOTIONS, CONDITIONS, FAILURES, AND WITHDRAWALS OF STUDENTS

Detailed information regarding grades of scholarship and conditions and failures is given in the General Information Bulletin.

1. A regularly enrolled pharmacy student, who has not received condition or failure in any of the subjects of the prescribed course during the academic year or who has removed all conditions before the beginning of the following academic year, will be advanced to and enrolled in the next higher class.

2. Irregular students will be classified under the class in which the majority of their subjects is taken.

3. If the student is conditioned in the first semester of a subject which is continuous for one year, the instructor in charge may, at his discretion, excuse the student from reexamination on the work of the first semester and allow him to obtain credit by passing the subject successfully in the second semester.

4. A first year student who on account of failures has a light schedule in the second semester will not be allowed to fill his schedule by taking second, third, or fourth year subjects.

5. If a first year student obtained the grade of "5" at the end of the academic year in the two fundamental subjects (Botany and Chemistry) he shall not be allowed to enroll for any subject of the higher classes.

6. If at the end of the first year the grade of "5" is obtained in either of the fundamental subjects (Botany and Chemistry) the student will be permitted to take first or second year subjects *only* with the total credit of not more than 15 units including the subject in which he or she failed.

7. A student classified as first year is not entitled to register in any subject of the third year.

8. Any student registered in all of the regular subjects of any of the year prescribed course cannot take any prescribed course in any advanced year.

9. A second year student who fails in one subject will be allowed to take not more than 10 units in the first semester of the third year.

10. The student who has received for the second time the grade of "5" in the same two subjects will be dismissed from the School.

11. Regular senior students who have been conditioned in more than one subject must not be granted privilege of reexamination earlier than the following June.

12. Special cases not provided in the foregoing rules and regulations should be taken up by the Committee on Standing and Promotion.

GRADUATION WITH HONORS

The degree of Pharmaceutical Chemist or Bachelor of Science in Pharmacy "with honors" shall be granted to students in the regular course who have obtained an average grade of 1.50 without "4" in all subjects taken during three or four years' residence in the School. The degree of Pharmaceutical Chemist or Bachelor of Science in Pharmacy "with highest honors" shall be granted to students in regular course who have obtained a grade of 1 in not less than 75 per cent of all subjects taken during three or four years' residence in the School, and a grade of 2 in all other subjects. This is equivalent to an average of 1.25 or better.

DEPOSIT AND FEES

The tuition fee in this school is ₱30 a semester. Every new matriculant is required to make a deposit of ₱15. This amount is refundable at any time the student leaves the University. Besides tuition and deposit, each student also pays laboratory fees and other incidental fees. A summary of all the fees paid in this school is as follows:

	<i>First</i>	<i>Second</i>
<i>Year</i>	<i>Semester</i>	<i>Semester</i>
First	₱92.50 *	₱82.50
Second	87.50	82.50
Third	72.50	77.50
Fourth	72.50	72.50

Possibly there will be a little variation of the amount of fees to be paid during the second and third years, inasmuch as students during this period of the course have the option to elect certain laboratory courses. The variation however will be very little.

* This amount already includes the deposit of ₱15.00.

MILITARY SCIENCE AND PHYSICAL EDUCATION

The students of pharmacy are required to complete one year course each of Military Science and Tactics and Physical Education. Both subjects are prerequisite for graduation and must be completed during the first year of residence in the School. Exemptions will be granted and approved by competent authority when due to illness or physical disability. In such cases, a certified statement by the University Physician should accompany the request before it is forwarded for action by the department head. Any exempted student shall be required to make up the equivalent number of units to be taken in some academic subjects. (See Catalogues of the Departments of Military Science and Tactics, and Physical Education respectively.).

LIBRARY FACILITIES

A new spacious library is now provided in the present location. Several sets of pharmaceutical and chemical journals have been temporarily transferred from the library of the Bureau of Science to the School of Pharmacy. The students are constantly using them for reference works as well as for searching bibliography of assigned topics in the different pharmacy, pharmaceutical chemistry and library science courses.

The library of the Bureau of Science consisting of more than 73,000 bound volumes and more than 56,000 pamphlets is open to all students in pharmacy. The library at present contains complete sets of nine important journals of pharmacy along with many other reference works on pharmacy, chemistry, botany, and medical science. The student should find ample opportunity for current reading as fourteen of the leading foreign publications pertaining to pharmacy are regularly received and are at his disposal.

In addition, the University Main Library actually contains about 35,000 volumes.

LABORATORIES AND EQUIPMENT

Students in pharmacy do their work in the separate buildings housing the various departments of the University, a condition which possesses distinct advantages.

The botanical laboratories are equipped with an adequate number of microscopes and are supplied with the necessary specimens of plants, drugs, etc.

The courses in general and applied chemistry are given in properly equipped laboratories.

The laboratory work in Pharmacy and Pharmaceutical Chemistry is given in the spacious laboratory of the new location on the third floor of the medical annex building. A number of machines for manufacturing on a fairly large scale installed in the Machine Building of the School is occasionally operated by the students.

THE COURSE IN PHARMACY

Leading to the Degree of Bachelor of Science in Pharmacy

FIRST YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
Engl. 1	3	3	Engl. 1	3	3
Bot. 2	9	5	Bot. 2	9	5
Chem. 24	9	5	Chem. 24	9	5
Pharm. 11	5	3	Pharm. 11	5	3
Math. 3	3	3	Zool. 1	9	5
Military Science and Tactics and Phys.			Military Science and Tactics and Phys.		
Educ.	4	2½	Educ.	4	2½
TOTALS	33	21½	TOTALS	39	23½

SECOND YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
French or German 1 or Spanish 10	3	3	French or German 1 or Spanish 11	3	3
Bot. 7	9	5	Bot. 8	9	5
Chem. 26	9	5	Chem. 26	9	5
Chem. 27	9	5	Chem. 28	9	5
Physiol.	3	3	Pharm. 12	1	1
			Lib. Sc. 51	1	1
TOTALS	33	21	TOTALS	32	20

THIRD YEAR

FIRST SEMESTER			SECOND SEMESTER		
	<i>Hours</i>	<i>Units</i>		<i>Hours</i>	<i>Units</i>
French or German 2 or Spanish 12	3	3	French or German 2 or Spanish 13	3	3
Pharm. Chem. 21	5	3	Pharm. Chem. 21	5	3
Acctg. 6	2	2	Parasitology (Hygiene I-PP)	4	2
Biochemistry	10	6	Pharm. Chem. 31	8	4
Pharm. 21	7	3	Bacteriology	9	5
Lib. Sc. 151 .....	..	2	Pharmacy 22	4	2
Elective * .....	..	4	Elective * .....	..	4
TOTALS .....	..	23	TOTALS .....	..	23

* Physics 31 strongly recommended.

FOURTH YEAR

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Pharmacology	3	3	Pharmacology	6	4
Clin. Microscopy	6	3	Pharmacy 31	7	3
Pharmacy 101	1	1	Pharmacy 101	1	1
Pharm. Chem. 101	7	3	Pharm. Chem. 101	7	3
Pharm. Chem. 104	1	1	Pharm. Chem. 104	1	1
Ph. Jr. and Ethics	1	1	Ph. Jr. and Ethics	1	1
Pharm. Chem. 33	7	3	Elective .....	..	3
Pharmacy 24	1	1	Hygiene 1P	8	5
Elective .....	..	3			
TOTALS			TOTALS		
	..	19		..	21

MINIMUM REQUIREMENTS FOR GRADUATE WORK

Leading to the Degree of Master of Science

FIRST SEMESTER			SECOND SEMESTER		
	Hours	Units		Hours	Units
Phar.Chem. 104 (Semi-nar)	1	1	Phar.Chem. 104 (Semi-nar)	1	1
Phar. 201 (Adv.Pharm. Lit.)	1	1	Phar. 201 (Adv.Pharm. Lit.)	1	1
Electives *	8		Electives *	8	
Research and Thesis ..	5		Research and Thesis ..	5	

* Elective Courses for graduate students may be taken in the Departments of Pharmaceutical Chemistry, Pharmacy, Chemistry, Botany, Pharmacology and Geology or other departments provided that the required number of units in the major is completed and that the courses elected are submitted to the University Council Committee and the School Committee on Graduate Studies for approval.

COURSES OF INSTRUCTION

DEPARTMENT OF BACTERIOLOGY

Professor and Head, LIBORIO GOMEZ; Assistant Professor, REGINO J. NAVARRO; Instructor, BENJAMIN BARRERA.

PHARMACEUTICAL BACTERIOLOGY.—In the Philippines the pharmacist of the provinces, in many places, undoubtedly, will be called upon in emergencies to assist the physicians in sanitary work or occasionally to act on his initiative. For this reason it has been deemed advisable to include in his training sufficient knowledge in bacteriology to prepare him for such work. The course will not be as extensive or complete as that given in the course for medical students.

A number of the more common pathogenic bacteria is studied in the laboratory, and the methods of their dissemination and their relation to diseases pointed out. A number of lectures on industrial bacteriology is also included.

The principles of disinfection and sterilization are emphasized. A brief consideration of the laws of immunity is given and the methods of preparation of antisera and bacterial vaccines are described.

Third year; second semester, credit 5 units.

Dr. BARRERA.

CLINICAL MICROSCOPY.—The course consists in practical laboratory instruction with such talks and recitations as are necessary to elucidate the subject. The students are taught the methods and practical diagnostic importance of microscopic examination of feces, urine, sputum, blood, materials from various lesions of the skin, and fluids obtained by aspiration.

Fourth year; first semester, credit 3 units.

Dr. NAVARRO.

DEPARTMENT OF BOTANY

Associate Professor and Head, JOSE K. SANTOS; Assistant Professor, MARIA D. PASTRANA; Instructors, EUGENIA INCO-CAPARAS; MARIA T. VALLARTA, and Assistants.

Botany 2; *MORPHOLOGY AND CLASSIFICATION OF PLANTS.*—The course is designed for beginning students in botany. The work in the first semester is a general course in the morphology, physiology of seed plants, and in the second semester, the morphology and classification of lower plants, and the classification of the flowering plants. Lectures and laboratory work will be supplemented by study in the field and in the herbarium; each student will be required to prepare a small herbarium. The chief object of the course is to give students a broad conception of the morphology, histology, and classification of plants. It is especially suitable for students desiring a preparation for the study of plant products and is required of first year pharmacy students as the basis for the study of pharmacognosy.

Textbooks Brown, W. Textbook of General Botany; Brown, Laboratory Botany.

9 hours a week (6 Lab. 3 Class); throughout the year, credit 10 units

Drs. SANTOS and PASTRANA, Mrs. INCO-CAPARRAS, and Assistants.

Botany 7; *PHARMACOGNOSY*.—A study of the crude vegetable drugs official and non-official in the United States Pharmacopoeia. The laboratory work will cover the gross and microscopical characters of drugs and include some study of powdered drugs. Identification will receive careful attention and there will be frequent tests of ability to determine drugs. Lectures, recitations and tests will cover the main facts of the pharmacography of each drug. The roots, rhizomes, barks, and leaves will be taken up in this semester.

Text-books: Kraemer, Scientific and Applied Pharmacognosy; Sayre, Organic Materia Médica and Pharmacognosy; or Santos, An Outline in Pharmacognosy.

9 hours a week (6 Lab. 3 Class); first semester, credit 5 units.

Dr. SANTOS, Mrs. TOLENTINO VALLARTA, and Assistants.

Botany 8; *PHARMACOGNOSY*.—A continuation of the preceding course, dealing with the flowers, fruits, seeds, and miscellaneous vegetable and animal drugs official and non-official in the United States Pharmacopoeia.

Prerequisite: Botany 7.

9 hours a week (6 Lab. 3 Class); second semester, credit 5 units.

Dr. SANTOS, Mrs. TOLENTINO VALLARTA, and Assistants.

DEPARTMENT OF CHEMISTRY

Professor and Head, Amando Clemente; Professor Jose I. del Rosario;

Assistant Professors, Pilar Perez Herrera; Assistants, Adelaida Oreta; Consorcia Panganiban; Florencio A. Medina; and Assistants.

Chemistry 24; *GENERAL AND INORGANIC CHEMISTRY*.—A course designed primarily for pharmacy students, giving the essentials of general inorganic college chemistry. Both the fundamental principles of the subject and the practical application to the industries and everyday life are emphasized.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); throughout the year credit 10 units.

Professors DEL ROSARIO and MISS PANGANIBAN

Chemistry 26; *ORGANIC CHEMISTRY* (Chemistry of Carbon Compound).—An introductory course giving the theoretical principles and practical applications of synthetic organic chemistry. The general relations between different groups of compounds, the application of general reactions and the laboratory preparation and general behavior of compounds characteristic of each group, are emphasized.

Prerequisites: Chemistry 23, 24 or 25.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.) throughout the year, credit 10 units.

Dr. HERRERA, Miss ORETA, and Mr. MEDINA

Chemistry 27; *QUALITATIVE INORGANIC ANALYSIS*.—A systematic qualitative analysis of basic and acidic constituents of compounds, with drill in the analysis of mixtures, minerals and alloys (unknowns) the com-

position of which is unknown to the student. Each unknown is considered a practical examination. A course designed primarily for chemistry, pre-medical and pharmacy students.

Prerequisites: Chemistry 23, 24 or 25.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); first semester, credit 5 units.

Prof. del ROSARIO and Mr. VERA

Chemistry 28; *QUANTITATIVE INORGANIC ANALYSIS* (Volumetric and Gravimetric).—The theory and practice of volumetric and gravimetric analysis, chiefly the analysis of simple salts, minerals, and alloys. Special emphasis is laid upon the chemical calculations of standard solutions, oxidation, reactions, iodimetry, etc.

Prerequisites: Chemistry (23, 24 or 25) and 27.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); second semester, credit 5 units.

Prof. del ROSARIO and Mr. VERA

Chemistry 29; *ELEMENTARY PHYSICAL CHEMISTRY*.—A course devoted to the elementary study of the fundamental laws and properties of liquids and gases. Special attention is given to the essentials of electrochemistry, thermo-chemistry, and chemical dynamics.

Prerequisites: Chemistry 23 (24 or 25), 27, and 28.

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); first semester, credit 5 units.

DEPARTMENT OF ECONOMICS

Professor and Head, CONRADO BENITEZ; Instructor, ARTEMIO L. TULIO.

Accounting 6; *PHARMACY ACCOUNTING, BUSINESS ORGANIZATION AND PRACTICE*.—Required of students in the School of Pharmacy. Essential principles of accounting, business organization and operations, with special reference to the needs of students of Pharmacy.

2 hours a week, third year; first semester, credit 2 units.

Mr. TULIO.

DEPARTMENT OF ENGLISH

Professor and Head, ROBERT J. CONKLIN, and other members of the Department of English

English I; *FRESHMAN COMPOSITION*.—This course deals with the fundamentals of correct English expression, and is designed to aid the student in forming correct language habit. Study of the principles of English composition, the writing and revision of original themes, and collateral reading from the content of the course, which is prerequisite to all other courses in English.

3 hours a week (Class); throughout the year, credit 6 units.

GEOLOGY

Associate Professor and Head, JOSE M. FELICIANO; Assistant JUAN S. TEVES.

Geology 193; *PHARMACEUTICAL MINERALOGY*.—(Prerequisite Chemistry 24 and 27).

This course includes the elements of crystallography, detailed study of the physical and chemical properties, occurrences and uses, and determination of the more common minerals; with special emphasis to minerals and ores of metal used in pharmacy. Including mineral waters. (Primarily for pharmacy students.)

7 hours a week (lectures, recitations, and laboratory), first semester; credit three (3) units. Elective for pharmacy students.

DEPARTMENT OF HYGIENE

HILARIO LARA: Professor, Head, Department of Epidemiology, Statistics and Public Health Administration, and Secretary, School of Hygiene and Public Health. (Acts as Head, Dept. of Hygiene in the College of Medicine and Schools of Pharmacy and Dentistry.)

WALFRIDO DE LEON: Professor and Head, Department of Sanitary Bacteriology and Immunology.

CANDIDO M. AFRICA: Assoc. Professor and Acting Head, Department of Parasitology.

PABLO I. DE JESUS: Ass. Professor and Acting Head, Dept. of Sanitary Engineering, Industrial Physiology and Chemistry.

LAMBERTO LEIVA: Assoc. Professor of Parasitology.

AMPARO CONCHA-BRILLANTES: Assoc. Professor of Hygiene.

ALFREDO PIO DE RODA: Instructor in Sanitary Bacteriology and Immunology.

TOMAS M. GAN: Instructor in Hygiene.

GREGORIO LANTIN: Instructor in Hygiene.

With the reorganization of the School of Hygiene and Public Health on January 1, 1931, and the transfer of the staff of the Department of Hygiene and Parasitology and others to the School to constitute the nucleus of the full time staff of its different departments, the various hygiene and parasitology courses, given by the former department of this same name, are now given by the various departments of the School of Hygiene and Public Health. This school, therefore, assumes at present the teaching duties of the former Department of Hygiene and Parasitology. It serves several colleges and schools of the University of the Philippines such as the College of Medicine, College of Education, School of Pharmacy, School of Dentistry, School of Nursing, and School of Public Health Nursing in such an arrangement similar to the status of the Department of Mathematics or that of Physics of this University.

The various courses offered are described in the respective catalogues of the institutions served.

The School in its new quarters offers also opportunities for properly qualified students to undertake research in hygiene and public health.

Parasitology (Hygiene I-PP); GENERAL PARASITOLOGY FOR PHARMACY STUDENTS.—Given to third year pharmacy students, second semester. Total hours 64.

This course is designed to give the pharmacy students some general information concerning parasitology. It will consist of lectures, laboratory work, and demonstrations of museum specimens of typical metazoan and protozoan parasites, and of insect vectors of disease. In helminthology the general morphology and life histories of the more important flukes, tapeworms and round worms will be considered. In protozoology the lectures will deal chiefly on the morphology, physiology and reproduction of the four groups of the protozoan and the general principles governing the life cycles, mode of transmission, and pathogenicity of typical parasitic species. In entomology attention will be paid to those insects which are responsible for the transmission of important bacterial, protozoal, and helminthal diseases. Drugs which are most commonly employed in the treatment of diseases of parasitic causation will be briefly discussed.

Drs. AFRICA, LEIVA and Instructors.

Hygiene 1-P; PRINCIPLES OF HYGIENE.—Given to senior pharmacy students. Eight hours a week (didactic 3 and laboratory 5), during the second semester.

The course consists of lectures, conferences, laboratory exercises and demonstrations covering principles in biological and chemical hygiene.

The relation of pharmacy practice to public health is emphasized. Effort is made to include in the course a summary and a synopsis of the broader community applications of all that a pharmacy student has learned during his preceding years.

This course is given conjointly by the several departments of the School of Hygiene. The biological analysis of water, air, soil, milk, foods, other products, and preparation of vaccines and sera, are given by the Department of Sanitary Bacteriology and Immunology; the chemical and physical analysis of water, air, milk, and other foods including sanitation, is given by the Department of Sanitary Engineering, Industrial Physiology and Chemistry; while the prevention and control of communicable diseases in general are given by the Department of Epidemiology, Statistics and Public Health Administration. The Head of the latter department as Secretary of the School coordinates the various teaching activities of its several departments as regards this particular course.

Drs. LARA, DE LEON, DE JESUS, CONCHA-BRILLANTES, RODA, GAN, LANTIN, and other instructors.

DEPARTMENT OF MODERN LANGUAGES

Associate Professor and Acting Head, Emilio Natividad; Assistant Professors, Angela B. de la Cantera, Agustin Llenado, Cecilio Lopez; Instructors, Jose Paterno, Pura Santillan.¹

French 1; ELEMENTARY GRAMMAR AND COMPOSITION.—Reading and translation of easy French prose.

3 hours a week (Class); throughout the year, credit 6 units.

¹ On leave.

French 2; *INTERMEDIATE FRENCH*.—Second part grammar and composition—sight translation and conversations.

3 hours a week (Class); throughout the year, credit 6 units.

German 1; *A FIRST YEAR COLLEGE COURSE IN GERMAN*.—Pronunciation, grammar, easy readings, with practice in speaking and writing German.

3 hours a week (Class); throughout the year, credit 6 units.

German 2; *A PREPARATORY COURSE FOR THE READING OF LITERARY AND SCIENTIFIC AUTHORS*.—Class and outside reading of selected texts. Grammar and written exercises continued.

3 hours a week (Class); throughout the year, credit 6 units.

Prerequisite: German 1.

DEPARTMENT OF LEGAL MEDICINE

Professor and Head, SIXTO DE LOS ANGELES; Assistant Professor, ANASTACIA VILLEGAS.

PHARMACEUTICAL JURISPRUDENCE AND ETHICS.—The instruction in this course is given by lectures, one hour a week, during the whole course of the third-year students of pharmacy, covering the study of the legal relation of the practice of pharmacy with special reference to the rules and conditions prevailing in the Philippines, in order to enable them sufficiently to understand and to solve pharmaco-legal problems that they are likely to meet in their daily practice and to familiarize them with their professional duties and rights. In addition to this, a course on first aid to the sick and injured persons in emergency cases is given.

With respect to ethics, special lectures are given consisting of a brief discussion of the ethical rules and principles governing the relation and duties of the pharmacists to each other and to their profession at large, to the public, to physicians, and to the Government.

Textbook: Angeles, S. de los, *Outlines of a Course in Pharmaceutical Jurisprudence and Ethics*.

Fourth year; throughout the year, credit 2 units.

Drs. DE LOS ANGELES and VILLEGAS

DEPARTMENT OF LIBRARY SCIENCE

Associate Professor and Head of Department, GABRIEL A. BERNARDO
Assistant Professor, ISIDRO SANIEL, and Assistants.

Library Science 51; *CHEMICAL AND GENERAL BIBLIOGRAPHY I*.—Lectures, problems and discussion; classification and arrangement of books in the library; the library catalogue; the more generally used reference books; chemical and pharmaceutical source books; journals; abstract journals; general and special indexes to periodical literature; methods of compiling a subject bibliography. Required for second year students in pharmacy.

1 hours a week (Class); second year, second semester; credit 1 unit.

Prof. SANIEL

Library Science 151; *CHEMICAL AND GENERAL BIBLIOGRAPHY* 1.—Lectures, problems and discussions; further study of chemical and pharmaceutical source books; bibliographies; journals; reference serials. Study of society publications and government documents. Practical work in the preparation of subject bibliographies.

Elective for third or fourth year students taking pharmacy.

Prerequisite: Library Science 51.

2 hours a week (Class), third year, first semester; credit 2 units.

Prof. SANIEL

DEPARTMENT OF MATHEMATICS

Professor and Head, VIDAL A. TAN, and other members of the Department of Mathematics.

Mathematics 3; *ALGEBRA AND TRIGONOMETRY*.—Review of high School Algebra; Quadratic Equations and Graphs; Arithmetical and Geometrical Progressions; Definitions of Trigonometric functions; Logarithms; Solution of Right Triangles. For pharmacy and dentistry students majoring in General Science. No credit for students who have passed Math. 1. May not be substituted for Math. 1, 4, or 8.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

Professor and Head, M. V. DEL ROSARIO; Assistant Professor, ALFREDO C. SANTOS; Assistant Instructors, GUILLERMO QUIBILAN, and FELICIANA REYES.

Pharmaceutical Chemistry A; *ELEMENTARY PHARMACEUTICAL CHEMISTRY FOR NURSES*.—The course covering an average of fifty-one hours during the semester is primarily designed for students of the School of Nursing. The instruction consists of lecture, recitation and laboratory in applied general, organic and biochemistry, and serves as a basis for the intelligent study of materia medica, physiology, bacteriology pathology, hygiene and sanitation, dietetics, and practical nursing, as outlined by the Committee on Education of the National League of Nursing Education.

Dr. DEL ROSARIO, Mr. QUIBILAN and Miss REYES.

Pharmaceutical Chemistry 21; *INORGANIC AND ORGANIC PHARMACEUTICAL PREPARATIONS*.—It is the aim of this course to train the students in the preparation of the inorganic and organic substances as comprehended in the United States Pharmacopoeia, especially such as may be successfully prepared by practising pharmacists without the use of any more expensive set of apparatus than that which is generally found in the outfit of a fairly equipped pharmacy. Instruction is given by lectures, recitations, and general principles of preparation, the properties including incompatibilities, and the methods of preservation of the inorganic and organic substances will be discussed.

The laboratory work will deal mostly with the official preparations according to the pharmaceutical methods.

Third year; throughout the year, credit 6 units.

Drs. DEL ROSARIO and SANTOS, Mr. QUIBILAN and Miss REYES.

Pharmaceutical Chemistry 31; *PHARMACOPOEIAL TESTING AND PHARMACEUTICAL ASSAYING*.—The course is mainly devoted to a study of the most important physical and chemical pharmacopoeial tests as well as the chemical assays required by the United States Pharmacopoeia. The lectures will consist mainly of the discussion of the principles involved in the test and assays.

8 hours a week (2 did., and 6 lab.); second semester of third year; credit 4 units.

Drs. DEL ROSARIO and SANTOS, Miss REYES and Mr. QUIBILAN

Pharmaceutical Chemistry 33; *CHEMICAL TOXICOLOGY*.—This course will consist of lectures and laboratory work. In the laboratory the student will study the chemical properties of poisonous substances and processes of detection in the presence of other substances, including foods, stomach contents, tissues, etc. When practicable, quantitative estimations will also be made.

Fourth year, first semester; credit 3 units.

Dr. SANTOS, Mr. QUIBILAN and Miss REYES.

FOR BOTH UNDERGRADUATES AND GRADUATES

Pharmaceutical Chemistry 100; *PHARMACO-ORGANIC ANALYSIS*.—A course in elementary organic analysis with special reference to pharmaceutical compounds. Combustion of substances containing carbon, hydrogen, nitrogen, halogen and sulphur and determination of different elements and radicals.

First semester, credit 3 units.

Drs. DEL ROSARIO and SANTOS

Pharmaceutical Chemistry 101; *PLANT CHEMISTRY*.—Instruction in this subject is given in the form of lectures, seminar and laboratory work. The lectures deal with the general survey of the chemical compounds elaborated by the plants, mainly of pharmaceutical interest. In the laboratory, the students are started with the general preliminary methods and are gradually led to the extraction, isolation and identification of the different constituents of the plants under study. The seminar consists of the discussion of the work of the students as well as other assigned topics.

Fourth year; throughout the year, credit 6 units.

Drs. VALENZUELA and SANTOS.

Pharmaceutical Chemistry 102; *PHARMACO-ORGANIC SYNTHESIS*.—A laboratory course in synthesis of organic compounds of pharmaceutical or medical interest.

Elective in the Fourth Year, credit 3 units.

Drs. DEL ROSARIO and SANTOS.

Pharmaceutical Chemistry 103; *ADVANCED PHARMACEUTICAL ASSAYING*.—A continuation of Pharmaceutical Chemistry 32 but covering a wider field as the assays will not be limited to the Pharmacopoeia. An

elective course open to fourth-year students after they have completed the first three years of prescribed studies.

Elective in the Fourth Year, credit 3 units.

Drs. DEL ROSARIO and SANTOS.

Pharmaceutical Chemistry 104; *SEMINAR IN PHARMACY AND PHARMACEUTICAL CHEMISTRY WITH SPECIAL REFERENCE TO PLANT CHEMISTRY*.—

Fourth year; throughout the year, credit 2 units.

Drs. DEL ROSARIO, HOCSON, VALENZUELA and SANTOS.

Pharmaceutical Chemistry 200; *RESEARCH*.—Elective in the Fourth Year.

Credit to be arranged.

Drs. DEL ROSARIO, VALENZUELA and SANTOS.

GRADUATE COURSE

Pharmaceutical Chemistry 300.—*PHARMACEUTICAL CHEMISTRY RESEARCH*.

Credit 10 units, hours to be arranged.

Drs. DEL ROSARIO and SANTOS.

PHARMACY

Professor and Head, FELIX HOCSON; Associate Professor, PATROCINIO VALENZUELA; Instructor, SALUD CAMPOS-DEL ROSARIO; Assistant, JOSEFINA RAMOS; Graduate-Student Assistant.

Pharmacy A; *ELEMENTARY PHARMACY FOR NURSES*.—(See Catalogue of School of Nursing.)

Drs. HOCSON and CAMPOS-DEL ROSARIO.

Pharmacy 11; *TECHNICAL PHARMACY*.—Lectures, recitations, and laboratory work. This course consists of the study of metrology, pharmaceutical processes, physical constants and pharmaceutical calculations. It includes the manipulation of balances, thermometers, polariscope, refractometers, etc., and the calibration of weights and measuring apparatus.

First year; throughout the year, credit 6 units.

Drs. CAMPOS-DEL ROSARIO and RAMOS.

Pharmacy 12; *PHARMACEUTICAL LATIN*.—This course consists of the study of rudiments of Latin as applied to the reading of prescriptions. Rules followed in latinizing titles of preparations, chemicals, etc., are also studied. Translation from Latin to English forms the greater portion of exercise work.

Second year; second semester, credit 1 unit.

Dr. CAMPOS-DEL ROSARIO.

Pharmacy 21; *GALENICAL PREPARATIONS*.—In this course various galenicals will be prepared and studied in the laboratory and discussed in the lectures. The course includes the preparation and study of waters, spirits, syrups, elixirs, glycerites, oleates, liniments, infusions, decoctions, tinctures, fluidextracts, etc.

Third year; first semester, credit 3 units.

Drs. HOCSON, VALENZUELA, CAMPOS-DEL ROSARIO, and RAMOS.

Pharmacy 22; *GALENICAL PREPARATIONS*.—This course is the continuation of Pharmacy 21. The technic required in making the solid galenicals of the U.S.P.X., N.F.V. and Spanish Pharmacopoeia and some other non-official pills, tablets, suppositories, cataplasms, cerates, troches, plasters, commonly prescribed in the Philippines is thoroughly studied.

Third year, second semester; credit 2 units.

Drs. HOCSON and RAMOS

Pharmacy 24; *LECTURES ON COMMERCIAL PHARMACY*.—The course will consist of a series of lectures given by special lecturers on such subjects as selection of a site, obtaining financial backing, selection of stocks and fixtures, store management, how to buy and sell, and other related subjects in commercial pharmacy.

Fourth year, first semester; credit 1 unit.

Pharmacy 31; *PRESCRIPTION READING, COMPOUNDING, DISPENSING AND INCOMPATIBILITIES*.—The course is devoted to the study of Magistral Pharmacy. The various phases of the compounding and dispensing together with the systematic study of incompatibilities are thoroughly discussed. Besides the consideration of several classical prescriptions, a critical study of thousands of local prescriptions collected from various drug stores in the Islands is also made.

Fourth year, second semester, credit 3 units.

Drs. HOCSON, VALENZUELA, CAMPOS-DEL ROSARIO and RAMOS.

FOR UNDERGRADUATES AND GRADUATES

Pharmacy 101; *HISTORY OF PHARMACY AND APPLIED PHARMACEUTICAL BIBLIOGRAPHY*.—This course of lecture discusses briefly the development of pharmacy from the earliest stages to the present time. The searching of literature of historical interest in pharmacy and chemistry is given as part of the course. Special attention is also given to the historical development of pharmacy in the Philippines. Students are required to write a theme on assigned topics, such as biographies of leading Filipino pharmacists and chemists, evolution of drug stores in the Philippines, history of Philippine medicinal plants, history of pharmaceutical organizations and institutions in the Philippines, etc. Most of these topics are reported in the class for discussion.

Fourth year, throughout the year, credit 2 units.

Dr. VALENZUELA

Pharmacy 102; *PHARMACEUTICAL MANUFACTURING*.—This course is intended to give students a working knowledge of the various kinds of machinery used in the manufacturing of pharmaceutical products. It is intended thereby to encourage the manufacture of these products at home rather than their purchase abroad at a large expense. Pharmaceutical and related products as extract of tiki-tiki, pomades, dentrifices, floor wax, ampules, inks, and many others are prepared in the laboratory.

Elective in the Fourth Year; credit 3 units.

Drs. HOCSON, VALENZUELA and RAMOS.

Pharmacy 200; *RESEARCH*.—Elective in the fourth year; credit to be arranged.

Drs. HOCSON and VALENZUELA

Pharmacy 201; PHARMACEUTICAL LITERATURE.

Throughout the year (2 units).

Dr. VALENZUELA

GRADUATE COURSE**Pharmacy 300; RESEARCH IN PHARMACY.**

Credit, 10 units; hours to be arranged.

Drs. HOCSON and VALENZUELA

DEPARTMENT OF PHARMACOLOGY

Professor and Head, DANIEL DE LA PAZ; Professor, FAUSTINO GARCIA;
Associate Professor ROMULO GUEVARA; Instructor, LAURO PANGANIBAN;
Assistant, SOLOMON D. BRUNO.

Pharmacology; *PHARMACOLOGY FOR STUDENTS IN PHARMACY.*
—The course consists of lectures recitations and laboratory work. The lectures and recitations deal with the principles of general pharmacology; actions, effects and therapeutic uses of selected drugs. Biological Assay, and symptomatology and treatment of poisoning are emphasized. In the laboratory the students perform experiments on intact animals and isolated organs. Biological Assay and treatment of poisoning form important parts of the laboratory work. (3-hour lecture per week during the first and second semesters of the fourth year, plus 3-hour laboratory per week during the second semester of the same year.) Total 144 hours.

DEPARTMENT OF PHYSICS

Professor and Head, G. B. OBEAR; and other members of the Department.

PHYSICS 31.—A course offering an intermediate survey of all branches of Physics, general in character, and one designed to give Pharmacy students a good working knowledge of that Physics which is one step beyond the elementary. A knowledge of Algebra and a few elementary facts of Trigonometry are necessary. The course consists of lectures, recitations, solution of problems, and the successful performance of experiments in the laboratory, together with class room quizzes and laboratory quizzes.

Prerequisites: Physics A, or its equivalent; Mathematics 7 and 8, or their equivalents.

6 hours per week (3 lecturer, 3 laboratory), First semester,
credit 4 units.

PHYSICS 32.—A continuation of Physics 31.

Prerequisite: Physics 31.

6 hours per week (3 Lecture, 3 laboratory), Second semester,
credit 4 units.

Dr. OBEAR and others.

DEPARTMENT OF PHYSIOLOGY AND BIOCHEMISTRY

Professor and Head, ISABELO CONCEPCION; Professor, EMILIO BULATAO;
Assistant Professor, WENCESLAO PASCUAL; Instructor, MARIANO OCAMPO;
and Assistant Instructor, VICENTE LIMSON.

BIOCHEMISTRY.—Four lecture or recitation hours and six laboratory hours a week during the first semester of the third year. Total (didactic 63 hours, laboratory 93 hours), 156 hours.

Dr. CONCEPCION and Messrs. OCAMPO and LIMSON.

This course covers the chemistry of proteins, fats, carbohydrates, blood, digestion, secretion, excretion, and metabolism. Special attention is given to the methods which are used clinically in the examination of blood, urine, etc.

PHYSIOLOGY.—Three lectures or recitations a week during the first semester of the second year. Total (didactic 34, laboratory 51), 85 hours.

Drs. BULATAO and PASCUAL.

This course consists of lectures and recitations with demonstration experiment on the physiology of muscle, nerve, blood, circulation, respiration, mechanics of digestion, secretions, heat regulation, and the nervous system.

DEPARTMENT OF SPANISH

Professor and Head, JAYME C. DE VEYRA and other members of the Staff. Spanish 10; *ELEMENTARY SPANISH*.

Spanish 11; *ELEMENTARY SPANISH*.—A study of the elements of the Spanish language, with reading and exercises in conversation and composition.

Textbook: Moreno-Lacalle's *Elementos de Español*.

The two courses of one semester each, constitute a year course, with credit of 6 units divisible into two semestral courses of 3 units each.

Prerequisite for Spanish 11; Spanish 10.

3 hours a week (Class); credit, 3 units, either semester.

DEPARTMENT OF ZOOLOGY

Associate Professor and Head of the Department, HILARIO A. ROXAS¹;

Assistant Professor and Acting Head of the Department, LEOPOLDO S.

CLEMENTE; Instructor in Zoölogy, FELIX V. SANTOS.

Zoölogy I; *INTRODUCTION OF ZOOLOGY*.—Introduction to general principles of the subject. Prerequisite for all courses in the Department except for Zoölogy 2, 3, and 16.

9 hours a week (6 Lab, 3 Class); one semester, credit 5 units.

¹ On leave.

School of Hygiene and Public Health

University of the Philippines

ADMINISTRATIVE OFFICERS

FERNANDO CALDERON A.B., M.D.

*Director, School of Hygiene and Public Health; Dean, College of Medicine,
and Director, Philippine General Hospital.*

HILARIO LARA, M.D., C.P.H., Dr.P.H.

*Secretary, School of Hygiene and Public Health, Professor of Hygiene
and Preventive Medicine and Head, Department of Epidemiology,
Statistics and Public Health Administration, and Head,
Department of Hygiene, College of Medicine.*

FACULTY OF INSTRUCTION

WILLIAM B. WHERRY, A.B., M.D.

*Professor and Head of the Department of Bacteriology and Hygiene in the
University of Cincinnati; Head of the Department of Sanitary
Bacteriology and Immunology, University of the
Philippines.*

(Visiting Professor, 1929-1930)

ROBERT W. HEGNER, Ph.D.

*Professor and Head of the Department of Parasitology in the School of
Hygiene and Public Health, Johns Hopkins University; Head of
the Department of Parasitology, University of the Philippines*

(Visiting Professor, 1929-1930)

WADE W. OLIVER, A.B., M.D.

*Professor of Bacteriology and Head of the Department of Bacteriology,
Long Island College Hospital; Head of the Department of Sanitary
Bacteriology and Immunology, University of the Philippines.*

(Visiting Professor, 1930-1931)

JUSTIN M. ANDREWS, Ph.D.

*Associate Professor of Protozoology in the School of Hygiene and Public
Health, Johns Hopkins University; Head of the Department of
Parasitology, University of the Philippines.*

(Visiting Professor, 1930-1931)

HILARIO LARA, M.D., C.P.H., Dr. P.H.

*Professor of Hygiene and Preventive Medicine and Head of the
Department of Epidemiology, Statistics and Public Health
Administration*

WALFRIDO DE LEON, A.B., M.D., D.T.M.

Professor of Pathology and Bacteriology and Head, Dept. of Sanitary Bacteriology and Immunology; Chief, Department of Laboratories, Philippine General Hospital.

CANDIDO M. AFRICA, M.D., D.T.M.&H.

Associate Professor of Parasitology and Acting Head of the Department of Parasitology.

AMPARO CONCHA-BRILLANTES, M.D.

Associate Professor of Hygiene.

LAMBERTO LEIVA, M.D., D.T.M.

Associate Professor of Parasitology.

PABLO I. DE JESUS, A.A., M.D., Dr.P.H.

Assistant Professor of Hygiene and Acting Head of the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

MANUEL Ma. AYCARD, M.D., C.P.H.

Senior Medical Inspector, Philippine Health Service, Field Instructor, Rural Health Demonstration Unit.

MACARIO CUERPOCRUZ, M.D., C.P.H.

Medical Inspector, Philippine Health Service, Field Instructor, Urban Health Demonstration Unit.

TOMAS M. GAN, A.A., M.D.

Instructor in Hygiene.

GREGORIO T. LANTIN, A.A., B.S., M.D.

Instructor in Hygiene.

ROGELIO RELOVA, A.A., M.D.

Temporary Instructor in Sanitary Bacteriology and Immunology.

ALFREDO PIO DE RODA,¹ A.A., M.D.

Instructor in Sanitary Bacteriology and Immunology.

EUSEBIO D. AGUILAR, M.D.

Professorial Lecturer on Hospital Management; Chief, Division of Hospitals and Dispensaries and Assistant Director, Philippine Health Service.

JOSE ALBERT, B.A., L.M.S., M.D.

Professorial Lecturer on Child Hygiene; Professor and Head, Department of Pediatrics, College of Medicine, and Chief of Clinics, Philippine General Hospital.

SIXTO DE LOS ANGELES, A.B., L.M.

Professorial Lecturer on Sanitary Legislation; Professor and Head, Department of Legal Medicine, College of Medicine.

GEORGE C. DUNHAM,² M.D., C.P.H., Dr.P.H., D.T.M.&H.

Professorial Lecturer on Military Hygiene and Epidemiology; Major, U. S. Army Medical Corps, Health Adviser to the Governor-General.

¹ On Fellowship leave.

² Relieved Major George F. Lull, M.D., C.P.H., Dr.P.H., Major, U. S. Army, Health Adviser to the Governor-General.

JOSE F. FABELLA, M.D.

Professorial Lecturer on Children of the State and Welfare Activities; Public Welfare Commissioner.

JOSE A. FERNANDEZ, M.D.

Professorial Lecturer on Mental Hygiene; Assistant Alienist, Insular Psychopathic Hospital, Philippine Health Service.

WILLIAM D. FLEMING, M.D.

Professorial lecturer on Industrial Hygiene; Major, U.S. Army Medical Corps; President, U.S. Army Medical Research Board.

LIBORIO GOMEZ, A.B., M.D., Ph.D.¹

Professorial Lecturer on Sanitary Bacteriology, Head of Dept. of Pathology and Bacteriology, College of Medicine.

LUIS GUERRERO, A.B., M.D.,

Professorial Lecturer on Tropical Medicine; Professor and Head, Department of Medicine, College of Medicine.

ROBERT W. HART, M.D.

Professorial Lecturer on Maritime Quarantine; Surgeon, U. S. Public Health Service, Chief, Quarantine Officer for the Philippine Islands.

ARISTON J. HERMANO, Ph.G., B.Sc. in Phar., D.Sc.

Professorial Lecturer on Chemical Hygiene; Chemist, Bureau of Science.

EUGENIO HERNANDO, A.B., M.D., C.P.H.

Professorial Lecturer on Vital Statistics; Chief, Division of Metropolitan Sanitation, Philippine Health Service.

EDWARD R. HYDE, B.S.C.E.

Professorial Lecturer on Sanitary Engineering; Dean, College of Engineering, U. P.

GEORGE F. COOPER, M.D.¹

Professorial Lecturer on Naval Hygiene; Lieut., M.C., U. S. Navy.

LEONCIO LOPEZ-RIZAL, A.B., M.D.

Professorial Lecturer on Epidemiology; Chief Division of Communicable Diseases, Philippine Health Service.

PAUL W. MACK, B.S.C.E.

Professorial Lecturer on Sanitary Engineering; Acting Manager, Metropolitan Water District.

CRISTOBAL MANALANG, M.D., D.T.M.

Professorial Lecturer on Malariology; Chief, Malaria Control Division, Philippine Health Service.

REGINO G. PADUA, M.D., D.T.M., Dr.P.H.

Professorial Lecturer on School Medical Inspection; Assistant to the Director, Philippine Health Service.

EDWARD R. PELIKAN¹

Temporary Professorial Lecturer on Maritime Quarantine; Assistant Chief, Bureau of Quarantine Service.

¹ Resigned.

PAUL F. RUSSELL, M.D., M.P.H.

Professorial Lecturer on Malariology; Member, International Health Division, Rockefeller Foundation.

OTTO SCHÖBL,¹ M.D.

Professorial Lecturer on Immunology; Chief, Division of Biology and Serum Laboratory, Bureau of Science.

ANTONIO VILLARAMA, M.D.

Professorial Lecturer on Maternal Hygiene; Assistant Professor of Obstetrics, College of Medicine, U. P.

CLARK H. YEAGER, M.D., C.P.H., Dr.P.H.

Professorial Lecturer on Rural Sanitation; Member, International Health Division, Rockefeller Foundation.

ISABELO CONCEPCION, M.D.

Lecturer on Chemical Hygiene; Professor and Head, Department of Physiology and Biochemistry, College of Medicine, U. P.

FELIPE ARENAS, A.B., M.D., C.P.H.

Lecturer on Industrial Hygiene; Chief, Office of General Inspection, Philippine Health Service.

MARIANO BASACA, A.B., M.D.

Lecturer Assistant in Sanitary Bacteriology; Bacteriologist, Bureau of Science.

JOSE GUIDOTE, A.B., M.D., C.P.H.

Lecturer Assistant in Vital Statistics; Chief, Office of Vital Statistics, Philippine Health Service.

WENCESLAO PASCUAL, M.D.

Lecturer on Industrial Hygiene; Assistant Professor of Physiology, College of Medicine, U. P.

¹ Resigned.

ADMINISTRATIVE OFFICERS OF THE UNIVERSITY

RAFAEL PALMA, LL.B., LL.D., *President.*
FELIPE ESTELLA, LL.B., *Secretary-Treasurer.*
LEANDRO H. FERNANDEZ, Ph.D., *Registrar.*
JUAN QUINTOS, B.S.C., C.P.A., *Comptroller.*
GABRIEL A. BERNARDO, B.L.S., M.A., *Librarian.*
SALVADOR LAGDAMEO, *Treasurer of the Philippine Islands, Treasurer ex officio.*
CREED C. HAMMOND, *Auditor of the Philippine Islands, Auditor ex officio.*

THE BOARD OF REGENTS

REGENTS EX OFFICIO

Honorable JOHN H. HOLLIDAY, Vice-Governor of the Philippine Islands and Chairman of the Board of Regents.
Honorable RAFAEL PALMA, President of the University.
Honorable ELPIDIO QUIRINO, Chairman of the Committee on Public Instruction of the Philippine Senate.
Honorable GREGORIO ANONAS, Chairman of the Committee on Public Instruction of the House of Representatives.

APPOINTED REGENTS

Honorable HORACE B. POND
Honorable LUDOVICO HIDROSOLLO
Honorable FRANCISCO ORTIGAS

ELECTED REGENTS

ALUMNI

Honorable JOSE F. ZAMORA
Honorable CARLOS P. ROMULO

FACULTY

Honorable VIDAL A. TAN

SCHOOL OF HYGIENE AND PUBLIC HEALTH

PURPOSE

The purpose of the School is to provide medical graduates and public health officers with a general knowledge of some of the most important phases of public health work. A health officer's important duty in his relation to the public is that of adviser and teacher. It is, therefore, necessary that he should inspire confidence, and to do this, he must give evidence of a sound training.

The need for trained public health workers has long been felt in the Philippines. The Government, recognizing the need of competent health officers as a safeguard to an adequate local health service, followed the examples of the United States, England, Canada, and other countries, and, the Legislature, in 1927, provided funds for the establishment of a graduate School of Hygiene and Public Health.

In addition to the above functions, the School, assuming the duty of the former Department of Hygiene and Parasitology, also gives instructions in hygiene, preventive medicine, and parasitology to students of the Colleges of Medicine and Education, and the Schools of Dentistry, Pharmacy, Nursing, and Public Health Nursing.

Special training in public health is also given to men who, from time to time, are sent to the School by official and semi-official organizations such as the T. B. Commission, etc.

ORGANIZATION AND FINANCE

The teaching force of the Graduate School of Hygiene and Public Health in addition to its full-time staff is selected from the available personnel of the Colleges of Medicine and Engineering of the University of the Philippines, the Philippine Health Service, the Bureau of Science, the Public Welfare Commissioner's Office, the Rockefeller Foundation, the United States Quarantine Service, the Metropolitan Water District, and the Medical Corps of the United States Army and Navy.

The teaching and research activities of the School are conducted through its four departments, which are manned by full-time and part-time personnel. The present organization is made sufficiently elastic to permit of future expansion. Its four original departments are: (1) Department of Epidemiology, Statistics and Public Health Administration; (2) Department of Sanitary Bacteriology and Immunology; (3) Department of Parasitology; and (4) Department of Sanitary Engineering, Industrial Physiology and Chemistry.

The appropriation for the academic year 1928-1929 amounted to ₱20,000 only, but for the academic year 1929-1930 the Philippine Legislature appropriated ₱40,000 for the operation of the School. The Rockefeller Foundation, impressed with the inadequacy of the funds for maintaining the School, generously offered to contribute towards the expenses for the year 1929 \$10,000 and 2 professorships for a term of two years.

BUILDING

At the close of the academic year 1931-1932 the School moved to its new spacious and properly appointed three story building which, being an exact replica outside of the older Annex, completes the symmetry of the buildings that compose the medical science group. The construction of the new building was made possible thru the generosity of the Rockefeller Foundation by a donation of ₱302,471.31 to the University of the Philippines for the purpose of providing adequate and permanent quarters for the School of Hygiene and Public Health.

LIBRARY

The School has started equipping a new library of its own, located on the ground floor of the building. This library can easily accommodate about fourteen thousand volumes and a sitting capacity for fifty persons. Besides the regular appropriation in the annual budget, individual donations of books and periodicals to the library have been received from some of the former and present members of the School faculty: Professors McKinley, Mieldazis, Moriarty, Wherry, Lull, Hegner, Oliver, Lara, Albert, Dunham, Yeager, Schöbl, Russell and De Leon. Gifts, in the form of several volumes, have also been received from the Rockefeller Institute for Medical Research.

The Library of the Philippine Islands Medical Association, by action of its Council, was transferred and made available in the Library of the School of Hygiene and Public Health for the use of graduate and undergraduate students as well as of faculty members of both the College of Medicine and the School of Hygiene.

The Library of the Bureau of Science in the immediate vicinity of the School is opened to the students of the College of Medicine and of the School of Hygiene and Public Health. This Library, consisting of more than 54,000 bound volumes and more than 46,000 pamphlets, is particularly rich in literature on medicine and the allied sciences and includes complete files of the more important journals and society publications. The library contains complete up-to-date sets of the Index Medicus, the Quarterly Cumulative Index Medicus, and of the Index Catalogue of the United States Surgeon General's Office. Besides these, the University of the Philippines has also a library of its own, available for the use of students.

ADMISSION REQUIREMENTS

To be admitted to the graduate courses, an applicant must be a duly qualified physician. He must have a degree of Doctor of Medicine from a duly recognized medical school or be licensed to practice medicine in the Islands. The courses offered are designed primarily for graduates of medicine who wish to prepare themselves for public health work in the tropics, particularly in the Philippines.

The maximum number of graduate students for any trimester admitted is limited by the Faculty. In the admission of students, first choice is given to those who register as regular students in the order of their applications. Irregular and special students are accommodated as long as the full quota of admission is not reached.

The entrance requirements for special students are the same as those for regular students. Their applications must be approved by the Director of the School and by the Head of the Department in which they wish to do the major part of their work.

The requirements for medical, pharmacy, dental, education, and nursing students taking undergraduate courses in hygiene, parasitology, sanitary bacteriology, immunology, epidemiology, and others are set forth in the description of courses of the respective schools or colleges.

CLASSIFICATION OF STUDENTS

Students are classified under one of the three following:

1. *Regular Students—Candidates for the Certificate in Public Health.*—These students shall take the prescribed course of study leading to the Certificate in Public Health, and shall receive that Certificate when they have satisfactorily completed each required subject and have passed the final examination therein.

(Applicant in this class shall be given first consideration in making the student body up to the maximum approved by the Faculty.)

2. *Irregular Students who may ultimately be candidates for the Certificate in Public Health.*—This class comprises those students who for some reasons are unable to fulfill in a single year all of the requirements for the Certificate in Public Health. Such applicants will be accepted only when the total number of regular students is less than the maximum approved by the Faculty. (The number of irregular students will be limited so that it does not exceed the difference between the number of enrolled regular students, candidates for the Certificate in Public Health, and the maximum number of students approved by the Faculty.)

Irregular students, with the consent of the Head of the Department concerned, may register for any of the courses offered in the School and will receive credit therefor after they have satisfactorily completed the subject and passed the final examination therein. Such credits may be offered in partial fulfillment of the requirements for the Certificate in Public Health, subject to the conditions regulating the acceptance of credits (See "Credit Towards Advanced Standing"). For the trimester in which the requirements for the Certificate in Public Health are finally to be satisfied irregular students will automatically register as regular students, and they will then be candidates for the Certificate in Public Health.

3. *Special Students who are non-candidates for the Certificate in Public Health.*—Special students will be admitted only when the total enrollment of regular and irregular students does not come up to the maximum number approved by the Faculty. The number of special students to be admitted will therefore be limited so that the total enrollment of the School will not exceed the maximum approved by the Faculty.

Special students will receive no credit in this School for work done during the time they are classified as special students, and they are not obliged to take final examinations.

CREDIT TOWARD ADVANCED STANDING

Students applying for advanced standing or wishing to become regular students (candidates for the Certificate in Public Health) may be given credit for a whole course taken in this school or in another similar institution. They should file with the Director, before the beginning of the college year, an application in duplicate showing where the work was done, the names of the professors, dates of the beginning and of the end of the course, the total number of lectures or laboratory hours, and the grades received. The application should be accompanied by a certificate supporting the above facts from the registrar of the College or the professor under whom the work was done, and by the catalogue or schedule of that institution. In the absence of a satisfactory certificate, or at the discretion of the Head of the Department concerned, an examination may be required covering the whole or any necessary part of the subject for which credit is sought. This application, with its supporting evidence, shall be submitted to the heads of the departments concerned for decision.

If, in the opinion of the head of the department concerned, the subject matter of a course or a part of a course offered for advanced credit at this School has so changed with the advance of knowledge since that course was taken and that exemption from its present equivalent would constitute a serious deficiency in the public health training of the individual applying for the exemption, the Head of the Department concerned may deny him credit and require the course to be taken over again.

After the award of the advanced credit, the application will be sent to the Registrar of the University for record and file.

STANDING, CONDITIONS, FAILURES, AND WITHDRAWALS OF STUDENTS

1. The satisfactory completion of a course shall be determined by the professor in charge, through records of attendance, daily work of the student, examinations and other tests as he may employ. To pass in a course, regular students must satisfy the required minimum of (a) attendance of at least 80 per cent of the scheduled lectures, recitations, quizzes, laboratory periods, and other appointments in the course; and (b) at least a grade of "3".

2. The result of examinations, together with class and laboratory (if this is a part of the course) work, will be ranked and reported in five grades—1, 2, 3, 4, 5. A grade of "1" denotes marked excellence. A grade of "2" indicates that the student's work has been thoroughly satisfactory. A grade of "3" denotes a pass. A grade of "4" shall indicate that the student receiving such a grade is conditioned in the subject in which the mark was received. He may be given a re-examination in the subject matter of the course, or be required to do additional work or both, at the discretion of the instructor in charge. The grade of "3" is the highest mark which any student may receive as the result of re-examination for the removal of condition.

The failure to obtain university credit in a subject in which a grade of "4" has been received, before the beginning of the next academic year shall mean that the grade of "4" has automatically become a grade of "5", ex-

cept when due to prolonged and serious illness or any unavoidable detention, in which case, the student may have the privilege of taking the examination for the removal of condition at some other time at the discretion of the Director of the School.

A grade of "5" shall indicate that the student receiving such a grade has failed in the subject in which the grade was received. Failure in any subject will not entitle the student to a re-examination until he repeats the subject in which he has failed during the period which the instructor in charge may recommend.

Unexcused absence from a regular examination is construed as a failure therein.

3. Failure in any course causes a regular student, candidate for the Certificate in Public Health, either to withdraw or to register at the beginning of the following trimester as an irregular student or as a special student as he may choose, if vacancies for such students exist.

4. It is within the power and jurisdiction of the Faculty of the School, at any time, to recommend and cause the withdrawal of any student who appears to be unfit to continue with his work at the School.

TUITION AND LABORATORY FEES

Medical graduates who are in the employ of the Philippine Government and who are officially detailed to this school for graduate work are exempt from matriculation and laboratory fees, excepting the following miscellaneous fees:

Deposit	P10.00 (a)
Entrance	5.00 (b)
Registration	5.00 a semester
Library fee	2.50 " "
Athletic fee	1.50 " "
Medical fee	2.00 " "
Collegian	1.00 " "
Student Council	0.50 " "

(a) To be refunded at any time the student leaves the University.

(b) To be paid only by new students or other students who have not paid the fee before; other medical graduates not falling under the foregoing classification will pay the following fees:

FIRST TRIMESTER

Deposit	P10.00
Entrance fee	5.00
Tuition	40.00
Laboratory fees	10.00
Miscellaneous fees	15.00
Total	P80.00

SECOND TRIMESTER

Tuition	P40.00
Laboratory	20.00
Miscellaneous fees	10.00
<hr/>	
Total	P70.00

THIRD TRIMESTER

Tuition	P40.00
Laboratory fees	15.00
<hr/>	
Total	P55.00

DEGREE

Satisfactory completion of the prescribed course of study will lead to the Certificate in Public Health (C.P.H.). (See course of study on page 14.)

THE BAILON-DE LA RAMA SCHOLARSHIP IN PUBLIC HEALTH

I. General Rules.

1. Awards of any scholarship under this fund shall be made to those who obtain the highest general average in examinations given for the purpose.

2. Only needy students will be admitted to participate in these competitive examinations, and to prove that they deserve the support, they must submit to the Chairman of the Bailon-De la Rama Scholarship Committee at least two weeks before the date set for the examination, three certificates, one, signed by the Municipal Treasurer of the town in which the applicants reside, another, by the Principal of the High School from which they graduated; and a third by the Provincial Treasurer, showing that they really belong to the class of the needy.

3. All examinations for the Bailon-De la Rama Scholarship will be held on the first Monday and Tuesday of June of each year, or in case of vacancy, at such time as may be set by the Bailon-De la Rama Scholarship Committee.

4. The sum of P50 a month will be given to each beneficiary studying in Manila and P35 to each beneficiary studying in Los Baños while in attendance at the University for the required study. An additional amount of P75 shall be given each beneficiary for expenses of books and tuition at the beginning of each semester.

5. The beneficiary shall continue to hold the scholarship until completion of the course; but the scholarship will be terminated upon failure of the holder thereof in any subject required for the course or for any reason of misconduct or misbehavior.

II. Rules Governing Competitive Examinations

1. Qualifications of applicants:

- a. Sugar Technology.—(See page 39 of the General Catalogue Bulletin 14.)
- b. Medicine.—(See page 39 of the General Catalogue Bulletin 14.)
- c. Public Health.—Completion of all entrance requirements in the School of Hygiene and Public Health, University of the Philippines. (This means that only students who are holders of the degree of Doctor of Medicine from recognized institution of learning will be admitted.)
- d. Engineering.—(See page 40 of the General Catalogue. Bulletin 14.)

2. Subjects given in the competitive test:

- a. Hygiene and Public Health.—Those competing for the scholarship in hygiene and public health will take an examination in the following:

<i>Subjects</i>	<i>Weight Per cent</i>
Hygiene and Preventive Medicine	30
Bacteriology	20
Parasitology	15
Pathology	10
Sanitary Chemistry	10
Epidemiology	15

THE NICHOLS SCHOLARSHIP MEDAL

Major George F. Lull, Medical Corps, United States Army, Health Adviser to the Governor-General and Professorial Lecturer on Epidemiology and Military Hygiene, offered a Memorial Medal for Scholarship in memory of Lt. Col. Nichols.

The rules for the award of the medal is as follows:

1. This medal shall be awarded each year, to the student, who in the opinion of the Faculty of the School of Hygiene, University of the Philippines, makes the best showing in the class. Scholarship, personality and leadership shall all be considered.

2. Only regular candidates for the C. P. H. shall be eligible.

3. A committee of three members of the Faculty, known as the Nichols Medal Committee, shall be appointed by the Director, and this Committee will recommend to the Faculty its choice of the student to whom the award shall be made.

4. In order to arrive at a fair conclusion as to the scholarship standing of the students, weighted averages of the grades made in all subjects will be considered, that is to say, minor subjects will be considered in relation to majors on a ratio of the number of hours consumed in the various courses.

SPECIAL INFORMATION

To give students a comprehensive and practical field training, two health demonstration units have been established. One station has been estab-

lished in a section of the City of Manila to serve as a center of study for public health problems peculiar to urban communities; another in Binañonan, a municipality within easy reach from the City of Manila, serves as a center of study for public health problems peculiar to rural communities and provincial towns.

At the same time, these stations are being used as demonstration units operated on a cooperative basis, the purposes of which are as follows:

1. To serve as practical field training stations for health officers, medical students, public health nurses, sanitary inspectors and others;
2. To serve as a means for determining the most efficient procedure for combating the ravages of preventable diseases in a Philippine Community; and
3. To serve as a demonstration center for carrying out the various functions of a modern public health organization, and for securing a more effective general sanitary education and stimulation of public interest in community health.

The interest as well as the active cooperation of the private physicians, the Anti-Tuberculosis Society, the Public Welfare Commissioner's Office, the Red Cross Society, the Associated Charities, the Gota de Leche, and other governmental or private agencies engaged in health activities, as well as the various religious and social organizations, will be sought in the carrying out of the various details of the Public Health program adopted.

The units will operate under the School of Hygiene and Public Health and the Philippine Health Service. Most of the personnel will be from the Philippine Health Service on special detail.

PRIVILEGE GRANTED TO GRADUATES

SEVENTH PHILIPPINE LEGISLATURE

Third Session
(No. 3394)

H. B. No. 2949

AN ACT TO AMEND SECTION NINE HUNDRED SIXTY-SEVEN OF ACT NUMBER TWENTY-SEVEN HUNDRED AND ELEVEN COMMONLY KNOWN AS THE ADMINISTRATIVE CODE, ADMITTING GRADUATES OF SCHOOLS OF HYGIENE AND PUBLIC HEALTH TO THE COMMISSIONED SERVICE.

Be it enacted by the Senate and House of Representatives of the Philippine Legislature assembled and by the authority of the same:

Section 1.—Section Nine Hundred and Sixty-seven of Act Numbered Twenty-Seven Hundred and Eleven, known as the Administrative Code of Nineteen Hundred and Seventeen, is hereby amended by adding, at the end thereof, the following paragraph:

“Physicians who have received the certificate, or diploma, or degree, showing that they are graduates of the School of Hygiene and Public Health, University of the Philippines, or of similar school of any other university recognized by the Philippine Government as of good stand-

ing, shall upon recommendation of the Director of Health with the concurrence of the Secretary of Public Instruction, be admitted to the commissioned service in the grade of surgeon without passing the requisite civil service examination."

Section 2.—This act shall take effect on its approval.

APPROVED: December 5, 1927.

REQUIRED COURSES FOR THE CERTIFICATE IN PUBLIC HEALTH

(C. P. H.)

<i>Subjects</i>	<i>Hours</i>	<i>Units</i>
P.H.101.—PUBLIC HEALTH ADMINISTRATION:		
(a) Fundamentals of Public Health Organization and Administration	24	1½
(b) Child Hygiene	12	¾
(c) Maternal Hygiene	12	¾
(d) Children of the State & Welfare Activities	12	¾
(e) School Medical Inspection	12	¾
(f) Mental Hygiene	12	¾
(g) Sanitary Legislation	12	¾
(h) Hospital Management	9	½
(i) Military and Naval Hygiene	9	¾
(j) Maritime Quarantine	12	¾
(k) Practical Field Work	144	3
P.H.102.—SANITARY BACTERIOLOGY	144	4
P.H.103.—PARASITOLOGY (Protozoology, Helminthology and Medical Entomology)	108	3
P.H.104.—BACTERIOLOGY AND IMMUNOLOGY	144	4
P.H.105.—BIOMETRY AND STATISTICS	144	4
P.H.106.—CHEMICAL HYGIENE AND NUTRITION	54	2
P.H.107.—SANITARY ENGINEERING	72	2½
P.H.108.—INDUSTRIAL PHYSIOLOGY AND HYGIENE .	36	1¾
P.H.109.—EPIDEMIOLOGY:		
(a) Epidemiology 1	144	4
(b) Epidemiology 2	24	1½
P.H.110.—MALARIOLOGY AND RURAL SANITATION.	108	3

ELECTIVES

P.H.111.—ADVANCED STUDIES AND RESEARCH IN ANY DEPARTMENT.

DEPARTMENT OF EPIDEMIOLOGY, STATISTICS, AND PUBLIC HEALTH ADMINISTRATION

HILARIO LARA, M.D., C.P.H., Dr. P.H., Professor of Hygiene and Preventive Medicine and Head of Department.

....., Assistant Professor of Hygiene.

TOMAS M. GAN, A.A., M.D., Instructor in Hygiene.

MANUEL MA. AYCARD, A.B., M.D., C.P.H., Senior Medical Inspector, P. H. S., Field Instructor, Rural Health Demonstration Unit.

MACARIO CUERPOCRUZ, M.D., C.P.H., Medical Inspector, P. H. S., Field Instructor, Urban Health Demonstration Unit.

GRADUATE COURSES OF STUDY

P.H.101.—PUBLIC HEALTH ADMINISTRATION:

P.H.101 (a)—*Fundamentals of Public Health Organization and Administration*.—The course consists of lectures and conferences on the fundamental principles of health organization and administration. The functions of the different divisions, sections, offices and other sub-divisions of the public health machinery are presented in round table discussions. The inter-relations of various health agencies, governmental and otherwise, are discussed and the needs of common understanding and coordination of various sanitary activities for effective public health movements are emphasized.

This course is supplemented by Public Health 101 (k)—*Practical Field Work*, an intensive practical field instruction given towards the latter part of the third trimester.

Total hours, 24.

Dr. HILARIO LARA.

P.H.101 (b)—*Child Hygiene*.—The course consists of lectures and conferences on: the child hygiene concept; the functions and organization of child hygiene; the infant mortality problem, and the prevention of infant mortality.

Total hours, 12.

Dr. JOSÉ ALBERT.

P.H.101 (c)—*Maternal Hygiene*.—The course consists of lectures, conferences and demonstrations on obstetrical and gynecological problems in relation to public hygiene.

Total hours, 12.

Dr. ANTONIO VILLARAMA.

P.H.101 (d)—*Children of the State and Welfare Activities*.—The course consists of lectures, conferences, and demonstrations on institutions now existing in the Philippine Islands, for the care, education, and reformation of the children of the State; welfare activities undertaken by semi-public and private agencies dealing with various phases of social and health needs of the community; and the opportunities of said agencies for cooperating intelligently with the local public health service.

Total hours, 12.

Dr. JOSÉ FABELLA.

P.H.101 (e)—*School Medical Inspection.*—The course consists of lectures and conferences on the work of the school physician and the public health nurse assigned to school medical inspection. Conferences on the modern organization of school medical inspection service are held with the purpose of interesting the students in the various problems of tropical school sanitation and personal hygiene of the school child.

The relation of the Bureau of Education and the Philippine Health Service to private agencies interested in health activities of the school child is also considered.

Total hours, 12.

Dr. REGINO G. PADUA.

P.H.101 (f)—*Mental Hygiene.*—The first portion of the course is concerned with the importance of mental hygiene especially in regard to misdemeanors against society. The second portion deals with the so-called preventable mental diseases; and the last portion is devoted to a consideration of the prevention and treatment of amentia and dementia, as well as a brief consideration of the laws pertaining to mental defectives.

Total hours, 12.

Dr. JOSÉ A. FERNANDEZ.

P.H.101 (g)—*Sanitary Legislation.*—The course consists of lectures and conferences on the legal side of public health and other branches of State Medicine, more particularly as they apply to the local aspect of the health problems.

Total hours, 12.

Dr. SIXTO DE LOS ANGELES.

P.H.101 (h)—*Hospital Management.*—This course is intended to impart a general knowledge of the principles of organization and administration of small hospitals.

Total hours, 9.

Dr. EUSEBIO D. AGUILAR.

P.H.101 (i)—*Military and Naval Hygiene.*—In the portion of the course in Military Hygiene, the principles of military sanitation now used in the Army are discussed, together with the practical application of these methods to conditions in civilian populations in the Philippines. Personal hygiene, garbage and excreta disposal, care of food, purification of water and general sanitation of camps are among the subjects considered.

The portion of the course devoted to Naval Hygiene deals first with the selection and training of personnel and health conditions of the Navy in general. This is followed by a consideration of the problems of ventilation, the handling of food, stores and cargo and the health and comfort of the crew on various ships in different climates.

Total hours, 9.

Major GEORGE C. DUNHAM (M.C., U.S. Army).

Lieut. GEORGE F. COOPER (M.C., U.S. Navy).

P.H.101 (j)—*Maritime Quarantine.*—This course consists of lectures, conferences and actual field demonstrations in the diagnosis of quarantinable diseases and in methods of inspection of foreign vessels in reference to quarantine. It also includes detailed study of fumigation and disinfection of vessels in stream and at the Mariveles Quarantine Station. The students will have opportunity to observe and study methods of handling passengers and crew at the Quarantine Station.

Total hours, 12.

Dr. ROBERT W. HART.

P.H.101 (k)—*Practical Field Work.*—This course is the continuation of Public Health 101 (a)—Fundamentals of Public Health Organization and Administration. It consists of intensive practical field instructions. The students are assigned to work under the direction and supervision of the field instructors in the health demonstration units for an uninterrupted period of one month. A few round table discussion of the various problems actually met with in the field are held with the professor.

The students will be given credit for this practical course upon passing the regular examination given in the subject and upon certification of the field instructors that they have satisfactorily fulfilled their duties.

Drs. LARA, CUERPOCRUZ and AYCARD.

P.H.105.—*BIOMETRY AND STATISTICS.*—This course consists of lectures and laboratory work to familiarize students with the methods of collecting, tabulating and treating vital statistical returns. It includes studies on population, births, sickness, deaths and marriages; adjusting and measuring statistical data; comparison of the sanitary conditions and vitality of different communities as well as the measurement of efficacy of the sanitary measures taken; and methods of determining the significance of observed statistical differences. Methods for graduating statistical data are taught, especially those applicable to the preparation of health and epidemic indexes. The course also includes the measurement of variations and a brief consideration of the theory of correlation.

Drs. HERNANDO, LARA and GUIDOTE.

P.H.109. (a)—*EPIDEMIOLOGY 1.*—The course consists of lectures, conferences, demonstrations and laboratory work on the practical application of the principles and methods of epidemiological investigation.

The course aims to give the students a view of the mass phenomena of communicable diseases and to offer some training in methods of observation, analysis, and interpretation of disease distributions. It also includes consideration of the causative factors, sources of infection, modes of transmission and special procedures adopted to the prevention and control of communicable diseases.

Prerequisite course: P.H.105—*Biometry and Statistics.*

Total hours, 144.

Drs. LARA, DUNHAM, and Assistant.

P.H.109 (b)—*Epidemiology 2*.—The course consists of lectures and conferences. It deals with the consideration of the most common communicable diseases in the Philippines from the standpoint of history, special features, and prevalence throughout the Islands. This course is supplementary to **P.H.109 (a) *Epidemiology 1***.

Total hours, 24.

Dr. LEONCIO LOPEZ-RIZAL.

P.H.111.—ADVANCED STUDIES AND RESEARCH (*Elective*).

UNDERGRADUATE COURSES

MEDICAL STUDENTS

HYGIENE 2; (Principles of Hygiene and Public Health).—Third year medical students, 8 hours a week, during the first semester. Didactic 2 hours and laboratory (practical work) 6 hours a week.

(For description of the course see Department of Hygiene, College of Medicine Catalog).

Total hours, 136.

Drs. LARA, GAN, and Assistants.

Prerequisites: First 2 years of Medical College Curriculum or its equivalents.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology (Public health laboratory practice); the Department of Sanitary Engineering, Industrial Physiology and Chemistry (Sanitation and sanitary chemistry); and the Department of Epidemiology, Statistics, and Public Health Administration (General Public Health Procedures).

HYGIENE 3; (Special Problems in Hygiene and Public Health).—Fourth year medical students one hour twice a week during the first semester.

(For description of the course see Department of Hygiene, College of Medicine Catalog).

Total hours, 34.

Dr. LARA.

Prerequisites: Hygiene 2 and one Sanitary Survey Report.

DENTAL STUDENTS

HYGIENE 1D; (Principles of Hygiene and Preventive Medicine).—Dental students candidates for the degree of Doctor of Dental Medicine during the first semester, four hours twice a week.

Total hours, 136.

Drs. LARA, GAN, and Assistants.

This course is given conjointly by the Department of Epidemiology, Statistics and Public Health Administration; the Department of Sanitary Bacteriology and Immunology; and the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

PHARMACY STUDENTS

HYGIENE 1P; (Principles of Hygiene).—Fourth year Pharmacy students, 8 hours a week (Didactic 3 and laboratory 5), during the second semester.

Total hours, 144.

Drs. LARA, GAN, and Assistants.

This course is given conjointly by the Department of Epidemiology, Statistics and Public Health Administration; the Department of Sanitary Bacteriology and Immunology; and the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

HEALTH EDUCATION

HEALTH EDUCATION 4; (Epidemiology).—Lectures, recitations, and practical demonstration, 3 hours a week.

Total hours, 54.

Prerequisites: Health Education 1 and 2.

Dr. GAN.

HEALTH EDUCATION 5; (Child and Maternal Hygiene).—Lectures, recitations, and practical demonstrations, 3 hours a week.

Total hours, 54.

Dr. GAN.

PUBLIC HEALTH NURSING

P.H.N. 11—*VITAL STATISTICS*.—This course is given by the Department of Epidemiology, Statistics, and Public Health Administration.

Total, 36 hours.

Drs. LARA and GAN.

P.H.N. 10—*EPIDEMIOLOGY*.—Lectures, recitations and practical demonstrations, 3 hours a week. This course is given by the Department of Epidemiology, Statistics, and Public Health Administration.

Total, 54 hours.

Dr. GAN.

P.H.N. 12—*PRACTICAL FIELD WORK IN PUBLIC HEALTH*.—Intensive practical field instruction in public health nursing in Urban and Rural health demonstration units.

Two months in urban and rural units.

Drs. LARA, AYCARD, CUERPOCRUZ, GAN, and Assistants.

DEPARTMENT OF SANITARY BACTERIOLOGY AND IMMUNOLOGY

Dr. WALFRIDO DE LEON, A.B., M.D., D.T.M., Professor and Head of the Department.

Dr. AMPARO CONCHA-BRILLANTES, M.D., Associate Professor.

Dr. ALFREDO PIO DE RODA, M.D., Instructor.

Dr. ROGELIO RELOVA, M.D. Temporary Instructor.

GRADUATE COURSES

P.H.102; *SANITARY BACTERIOLOGY*.—This course, which includes a review of the fundamentals of Bacteriology, is designed to stress the more important practical methods and laboratory tests for the detection of micro-organisms that have a particular bearing on health problems in the Philippines. Detailed laboratory work, supplemented by lectures and demonstrations, is given on the testing of disinfectants, the bacteriology of air, water and foods in relation to health and disease, and the identification of the intestinal pathogens. The course is completed by a study of the bacteriology and mycology of the more important infectious diseases, especially those that are prevalent in the tropics.

Total hours, 144.

Drs. DE LEON, RODA, RELOVA, and BASACA.

P.H.104; *BACTERIOLOGY AND IMMUNOLOGY*.—This course, consisting of lectures and laboratory work, four hours, three times a week for the second trimester, is concerned with the fundamental principles of infection and immunity. It includes not only the interpretation and practical application of the various basic and important serologic reactions but it involves detailed animal experimentation by the students in the laboratory, as well as the preparation by them of such antibodies as anti-toxins, agglutinins, precipitins, bacteriolysins and hemolysins. During the course, practical demonstrations are given at Alabang on the actual preparation on a commercial scale of toxins, antitoxins, vaccines and other biological products. The latter portion of the course is concerned with a study of complement fixations, the Wassermann reaction, phagocytosis, the preparation of vaccines, and a study of anaphylaxis and allergy.

Total hours, 144.

Drs. DE LEON, RELOVA and RODA.

P.H.111.—*ADVANCED STUDIES AND RESEARCH (Elective)*.

UNDERGRADUATE COURSES

MEDICAL STUDENTS

HYGIENE 2; (Principles of Hygiene and Public Health).—Third year medical students, 8 hours a week, during the first semester. Didactic 2 hours and laboratory (practical work) 6 hours a week.

Total hours, 136.

(For description of the course see Department of Hygiene, College of Medicine Catalog).

Prerequisites: First 2 years of Medical College Curriculum or its equivalents.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology (Public health laboratory practice); the Department of Sanitary Engineering, Industrial Physiology and Chemistry (Sanitation and sanitary chemistry); and the Department of Epidemiology, Statistics, and Public Health Administration (General Public Health procedures).

Drs. CONCHA-BRILLANTES, RODA and RELOVA.

DENTAL STUDENTS

HYGIENE 1D; (Principles of Hygiene and Preventive Medicine).—Dental students candidates for the degree of Doctor of Dental Medicine during the first semester, four hours twice a week.

Total hours, 136.

This course is given conjointly by the Department of Epidemiology, Statistics and Public Health Administration; the Department of Sanitary Bacteriology and Immunology; and the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

Drs. CONCHA-BRILLANTES, RODA and RELOVA.

PHARMACY STUDENTS

HYGIENE 1P; (Principles of Hygiene).—Fourth year pharmacy students, 8 hours a week (Didactic 3 and laboratory 5), during the second semester.

Total hours, 144.

This course is given conjointly by the Department of Epidemiology, Statistics and Public Health Administration; the Department of Sanitary Bacteriology and Immunology; and the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

Drs. CONCHA-BRILLANTES, RODA and RELOVA.

HEALTH EDUCATION

HEALTH EDUCATION 2; (Elementary Bacteriology and Parasitology).—Lectures, demonstrations, recitations, and laboratory work given during the second semester, 6 hours a week.

Total hours, 108.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology and the Department of Parasitology.

Drs. DE LEON and RELOVA.

PUBLIC HEALTH NURSING

PERSONAL AND DOMESTIC HYGIENE.—

Total hours, 24.

Dr. CONCHA-BRILLANTES.

P.H.N.9.—ELEMENTARY BACTERIOLOGY AND PARASITOLOGY

6 hours a week during the second semester.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology and the Department of Parasitology.

Drs. DE LEON and RELOVA.

NURSING

PRINCIPLES OF HYGIENE

Given 2 hours a week.

Total hours, 36

Dr. CONCHA-BRILLANTES.

PATHOLOGY

17 hours.

Dr. DE LEON.

DEPARTMENT OF PARASITOLOGY

CANDIDO M. AFRICA, M.D., D.T.M.&H., Associate Professor of Parasitology and Acting Head of the Department.

LAMBERTO LEIVA, M.D., D.T.M., Associate Professor of Parasitology.
....., Instructor in Parasitology.

GRADUATE COURSES

P.H.103; *PARASITOLOGY*.—The course consists in a systematic review of the protozoa and helminths, particular emphasis being laid on the parasitic forms infesting man in the Philippine Islands. The work will be taken up on a comparative basis and will deal to some extent with species parasitic in the lower animals, plants, and free-living forms, as well as those infesting man. Stress will be laid on the relation of the protozoa and helminths to hygiene and preventive medicine. The class room work will consist of didactic lectures bearing on morphology, physiology, cytology, parasitology, taxonomy, and life cycles. Important diseases found in this country produced by parasitic protozoa and worms, including methods of diagnosis, symptomatology, pathology, distribution, economic importance, prophylaxis, treatment and methods of control, will be emphasized. In the laboratory the principal technical methods of use in the public health laboratory of parasitology will be practised. There will be detailed study of fresh and stained materials.

In the latter part of the course, there will be taken up a brief review of structure, habits, and biology of common types of Philippine insects known to be disease carriers or suspected of being capable of disease transmission.

Total hours, 144

Drs. AFRICA and LEIVA.

P.H.110; *MALARIOLOGY AND RURAL SANITATION*.—The course in malariology is presented to familiarize the students with the common methods of malariometry and malaria control. Part of the time is spent in an intensive drill on the recognition and typing of malarial parasites and in the identification of local adult and larval anophelines. Malaria surveys are conducted by the class and the data collected are assembled in proper form for analysis. The action of various larvacides is demonstrated in the laboratory, and is considered in relation to their action under various field conditions by visits to localities where different control projects are in operation.

Through the courtesy of the Director of Health the facilities of the central and malaria field laboratories of the Philippine Health Service are made available as much as possible for practical instruction.

The portion of the course dealing with rural sanitation consists of lectures and practical field demonstrations concerning the activities of the Mobile Health Unit (public health nurses) of the Philippine Health Service in educating and instructing rural populations in regard to sanitary measures, the report, care and follow-up of all diseases with special reference to those related to malnutrition and food contamination. Rural housing problems, the construction and installation of sanitary latrines, methods of improving the water supply, and the subterranean migration of micro-organisms will be considered in the class, the laboratory and field.

Total hours, lectures and laboratory, 108.

This course is given conjointly by the Department of Sanitary Engineering, Industrial Physiology and Chemistry and the Department of Parasitology.

Drs. RUSSELL, MANALANG and AFRICA
Drs. YEAGER and DE JESUS.

P.H.111.—ADVANCE STUDIES AND RESEARCH (*Elective*)

UNDERGRADUATE COURSES

MEDICAL

HYGIENE 1M; (Parasitology).—Second year medical students during first semester. Didactic 54 hours, and laboratory 122 hours.

Total hours, 176.

Prerequisites: Biology, Anatomy, and Physiology.

For description see College of Medicine Catalog.

Drs. AFRICA and LEIVA.

DENTAL

PARASITOLOGY 1B; (Dental Protozoölogy).—Third year dental students. Lectures and laboratory (Lecture 10 and Laboratory 14 hours).

Total hours, 24.

Dr. LEIVA.

PHARMACY

PARASITOLOGY; (General Parasitology for Pharmacy Students).—Junior pharmacy students, during the second semester.

Total hours, 64.

Drs. AFRICA and LEIVA.

HEALTH EDUCATION

HEALTH EDUCATION 2; (Elementary Bacteriology and Parasitology).—Lectures, demonstrations, recitations, and laboratory work given during the second semester, 6 hours a week.

Total hours, 108.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology and the Department of Parasitology.

Drs. AFRICA and LEIVA.

PUBLIC HEALTH NURSING

P.H.N.9.—*ELEMENTARY BACTERIOLOGY AND PARASITOLOGY*

6 hours a week during the second semester.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology and the Department of Parasitology.

Dr. AFRICA.

DEPARTMENT OF SANITARY ENGINEERING, INDUSTRIAL PHYSIOLOGY AND CHEMISTRY

PABLO I. DE JESUS, M.D., Dr.P.H., Assistant Professor of Hygiene and Acting Head of the Department.

....., Assistant Professor of Hygiene.

GREGORIO T. LANTIN, A.A., B.S., M.D., Instructor in Hygiene.

GRADUATE COURSES

P.H.106; *CHEMICAL HYGIENE AND NUTRITION*.—The course consists of lectures, conferences, demonstrations and laboratory work. The lectures consist of a brief discussion of the sanitary significance of chemical examination of water, the principles of nutrition and the study of food and drug adulterations.

The laboratory work and demonstrations are designed to acquaint the student with some of the more important methods of chemical analysis of water, and of food and food products and their adulterations.

Conferences and discussions of selected topics supplement the main work of the course.

Total hours, 54.

Drs. DE JESUS, HERMANO and Assistants.

P.H.107; *SANITARY ENGINEERING*.—The course consists of lectures, conferences and demonstrations. The lectures and conferences include a detailed consideration of water supplies and purification, sewerage and sewage disposal, refuse collection and disposal, housing, school sanitation, town planning, insect and vermin control, milk and food control, and other sanitary engineering problems met with in urban and rural communities. The demonstrations consist of visits to the water supply of the City of Manila, the pumping station, incineration plant, a dairy, etc.

Conferences, reports and discussions of selected topics form a portion of the course.

Total hours, 72.

Dr. DE JESUS, Dean HYDE, and Mr. MACK.

P.H.108; *INDUSTRIAL PHYSIOLOGY AND HYGIENE*.—The course consists of lectures, demonstrations and sanitary excursions. The lectures include the following topics: (1) The physiological principles applied to

ventilation and illumination of factories; (2) Industrial toxicology and medicine, with special emphasis on lead poisoning; (3) The causes and prevention of accidents; (4) The problem of child and woman labor; and (5) Industrial fatigue, discussing its theoretical aspects.

The sanitary excursions consist of visits to industrial firms for the purpose of illustrating and supplementing the topics discussed in the lectures.

Total hours, 36.

Drs. DE JESUS, PASCUAL and ARENAS.

P.H.110; *MALARIOLOGY AND RURAL SANITATION*.—The course in malariology is presented to familiarize the students with the common methods of malariometry and malaria control. Part of the time is spent in an intensive drill on the recognition and typing of malarial parasites and in the identification of local adult and larval anophelines. Malaria surveys are conducted by the class and the data collected are assembled in proper form for analysis. The action of various larvacides is demonstrated in the laboratory, and is considered in relation to their action under various field conditions by visits to localities where different control projects are in operation.

Through the courtesy of the Director of Health the facilities of the central and malaria field laboratories of the Philippine Health Service are made available as much as possible for practical instruction.

The portion of the course dealing with rural sanitation consists of lectures and practical field demonstrations concerning the activities of the Mobile Health Unit (public health nurses) of the Philippine Health Service in educating and instructing rural populations in regard to sanitary measures, the report, care and follow-up of all diseases with special reference to those related to malnutrition and food contamination. Rural housing problems, the construction and installation of sanitary latrines, methods of improving the water supply, and the subterranean migration of micro-organisms will be considered in the class, the laboratory and field.

Total hours, lectures and laboratory, 108.

Drs. RUSSELL, MANALANG and AFRICA.

Drs. YEAGER and DE JESUS.

UNDERGRADUATE COURSES

MEDICAL

HYGIENE 2; (Principles of Hygiene and Public Health).—Third year medical students, 8 hours a week, during the first semester. Didactic 2 hours and laboratory (practical work) 6 hours a week.

Total hours, 136.

(For description of the course see Department of Hygiene, College of Medicine Catalogue.)

Prerequisites: First 2 years of Medical College Curriculum or its equivalent.

This course is given conjointly by the Department of Sanitary Bacteriology and Immunology (Public health laboratory practice); the Department of Sanitary Engineering, Industrial Physiology and Chemistry (Sanitation and sanitary chemistry); and the Department of Epidemiology, Statistics, and Public Health Administration (General Public Health Procedures).

Drs. DE JESUS, LANTIN, and Assistants.

DENTAL

HYGIENE 1D; (Principles of Hygiene and Preventive Medicine).—Dental students candidates for the degree of Doctor of Dental Medicine during the first semester, four hours twice a week.

Total hours, 136.

This course is given conjointly by the Department of Epidemiology, Statistics and Public Health Administration; the Department of Sanitary Bacteriology and Immunology; and the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

Drs. DE JESUS, LANTIN, and Assistants.

PHARMACY

HYGIENE 1P; (Principles of Hygiene).—Fourth year pharmacy students, 8 hours a week (Didactic 3 and laboratory 5), during the second semester.

Total hours, 144.

This course is given conjointly by the Department of Epidemiology, Statistics and Public Health Administration; the Department of Sanitary Bacteriology and Immunology; and the Department of Sanitary Engineering, Industrial Physiology and Chemistry.

Drs. DE JESUS, LANTIN, and Assistants.

HEALTH EDUCATION

HEALTH EDUCATION 6; (Public Hygiene and Sanitation).—Lectures, recitations and practical demonstrations, 3 hours a week.

Total hours, 54.

Prerequisites: Health Education 1, 2, 3, 4, and 5.

Drs. DE JESUS, LANTIN, and Assistants.

NURSING

PUBLIC SANITATION.—Given to senior students of nursing, 1 hour a week.

Total hours, 18.

Drs. DE JESUS, and LANTIN.

HOURS OF WORK IN EACH SUBJECT

SUBJECTS	First Trimester	Second Trimester	Third Trimester	Totals
GRADUATE				
P.H.101—PUBLIC HEALTH ADMINISTRATION:				
(a)—Fundamentals of Public Health Organization and Administration	24	....	....	252
(b)—Child Hygiene .....	....	12*	12*	
(c)—Maternal Hygiene .....	....	....	....
(d)—Children of the State and Welfare Activities	12*	....	....
(e)—School Medical Inspection .....	....	....	12*	
(f)—Mental Hygiene	12*	....	....
(g)—Sanitary Legislation ....	....	....	12*	
(h)—Hospital Management ...	....	9*	....
(i)—Military and Naval Hygiene .....	....	9*	....
(j)—Maritime Quarantine ....	....	....	12*	
(k)—Practical Field Work ....	....	....	126	
P.H.102—SANITARY BACTERIOLOGY	144	....	....	144
P.H.103—PARASITOLOGY (Protozoölogy, Helminthology and Medical Entomology)	108	....	....	108
P.H.104—BACTERIOLOGY AND IMMUNOLOGY .....	....	144	....	144
P.H.105—BIOMETRY AND STATISTICS .....	....	144	....	144
P.H.106—CHEMICAL HYGIENE AND NUTRITION .....	....	54	....	54
P.H.107—SANITARY ENGINEERING	72	....	....	72
P.H.108—INDUSTRIAL PHYSIOLOGY AND HYGIENE .....	....	36	....	36
P.H.109—EPIDEMIOLOGY:				
(a)—Epidemiology 1 .....	....	....	144	168
(b)—Epidemiology 2 .....	....	....	24	
P.H.110—MALARIOLOGY AND RURAL SANITATION (including Tropical Medicine-clinical aspect-12 lectures) .....	....	....	108	108

* Schedule subject to change from year to year.

HOURS OF WORK IN EACH SUBJECT

SUBJECTS	1st Semester	2nd Semester	Totals
UNDER-GRADUATE			
<i>Medicine:</i>			
Hygiene 2 (Principles of Hygiene and Public Health)	136	....	136
Hygiene 3 (Special Problems in Hygiene and Public Health) ..	84	....	34
Hygiene 1M (Parasitology)	176	....	176
<i>Dental:</i>			
Parasitology 1B (Dental Proto-Zoölogy) .....	....	24**	24
Hygiene 1D (Principles of Hygiene and Preventive Medicine)	136	....	136
<i>Pharmacy:</i>			
Hygiene 1P (Principles of Hygiene) .....	....	144	144
Parasitology (General Parasitology for Pharmacy students) ..	....	64	64
<i>Health Education:</i>			
Health Education 2 (Elementary Bacteriology and Parasitology)	....	108	108
Health Education 4 (Epidemiology) .....	....	54	54
Health Education 5 (Child and Maternal Hygiene)	54	....	54
Health Education 6 (Public Hygiene and Sanitation) .....	....	54	54
<i>Public Health Nursing:</i>			
Personal and Domestic Hygiene .	24	....	24
Vital Statistics	36	....	36
Practical Field Work in Public Health .....	....	2 months	2 months
Epidemiology .....	....	54	54
Elementary Bacteriology and Parasitology .....	....	102	102
<i>Nursing:</i>			
Personal Hygiene (Probationers)	....	18	18
Personal Hygiene (Freshmen) ..	....	18	18
Public Sanitation (Senior)	18	....	18
Pathology	17	....	17

** From January to the end of the Semester.

DEGREES CONFERRED
CERTIFICATE IN PUBLIC HEALTH

1927-1928

1. ARENAS, DR. FELIPE—District Inspector and Chief, Office of General Inspection, Philippine Health Service, Manila.
2. CORPUS, DR. TEOFILO—Senior Medical Inspector, P.H.S., In charge, Health District No. 1, Meisic, Manila.
3. FIRME, DR. FLORENCIO—Senior Surgeon, P.H.S., District Health Officer, Ilocos Norte.
4. GARCIA, DR. CANDIDO—Surgeon, P.H.S., District Health Officer, Bohol.
5. GOITIA, DR. JUAN Bta.—Senior Surgeon, P.H.S., District Health Officer, Iloilo.
6. HERNANDEZ, DR. ANDRES T.—President, Sanitary Division, Naga, Camarines Sur.
7. LACUNA, DR. DEMETRIO—Senior Surgeon, P.H.S., District Health Officer, Zamboanga.
8. NADRES, DR. TEODORO F.—Surgeon, P.H.S., District Health Officer, Cavite.
9. PERALTA, DR. FELIPE—Surgeon, P.H.S., In Charge, Sampaloc Health Station, Manila.
10. SIAN, DR. JOSE—Senior Surgeon, P.H.S., In Charge, Systematic Vaccination, P.H.S., Manila.

1928-1929

1. ALBERTO, DR. SILVINO R.—(Deceased)
2. ALOMIA, DR. ANGEL—Surgeon, P.H.S., Division of Communicable Diseases, P.H.S., Manila.
3. ASUZANO, DR. MARCELINO A.—Medical Inspector, P.H.S., District Health Officer, Rizal.
4. AYCARDO, DR. MANUEL MA.—Senior Medical Inspector, P.H.S., In Charge Rural Health Demonstration Unit, School of Hygiene and Public Health, University of the Philippines, Binañonan, Rizal.
5. CARREON, DR. MARCIANO—Senior Surgeon, P.H.S., Resident Physician, in charge Bicol Leprosy Treatment Station, Legaspi, Albay.
6. CLAPP, DR. HILARY P.—Senior Surgeon, P.H.S., District Health Officer, Mountain Province, Representative for Mountain Province.
7. DELGADO, DR. RAFAEL E.—Surgeon, P.H.S., Assistant in charge Health District no. 2, Sampaloc, Manila.
8. ESTELLA, DR. FAUSTINO—Senior Surgeon, P.H.S., Incharge, Health District No. 3, Paco, Manila.
9. FABIE, DR. ESTEBAN A.—Senior Surgeon, P.H.S., District Health Officer, Occidental Negros.

10. FERNANDO, DR. JUAN S.—Senior Medical Inspector, P.H.S., District Health Officer, Malolos, Bulacan.
11. LIMJOCO, DR. CONSTANTINO—Senior Medical Inspector, P.H.S., District Health Officer, Cabanatuan, Nueva Ecija.
12. MADRID, DR. ESTELITO—President, 1st Sanitary Division, Sorsogon, Sorsogon.
13. MEDALLE, DR. FLAVIANO—Surgeon, P.H.S., District Health officer, Bukidnon.
14. PAYAD, DR. EVARISTO—Formerly Medical Officer, Red Cross.
15. RAQUEL, DR. ALFONSO—District Inspector, P.H.S., Health Inspection District No. 5 Iloilo, Iloilo.
16. RAYMUNDO, DR. JOSE M.—District Inspector, P.H.S., Health Inspection District No. 4, Cebu, Cebu.
17. VERANO, DR. EPIFANIO—Medical Officer, Anti-Tuberculosis Society.
18. YATCO, DR. FRANCISCO E.—President, 1st Sanitary Division, Daguete, Oriental Negros.

1929-1930

1. ALDABA, DR. ADOLFO—Medical Inspector, P.H.S., District Health Officer, Leyte.
2. ARREOLA, DR. FLORENCIO—Surgeon, P.H.S., District Health Officer, Antique.
3. BENITEZ, DR. VICTORIANO A.—Surgeon, P.H.S., District Health Officer, Abra.
4. DASMARIÑAS, DR. ANATOLIO—Medical Inspector, P.H.S., District Health Officer, Samar.
5. ESTRADA, DR. TOMAS—Formerly Medical Officer, Red Cross and of San Jose Sugar Estate.
6. JARA, DR. EUFEMIO—Senior Medical Inspector, P.H.S., District Health Officer, Tayabas.
7. MARTINEZ, DR. SALVADOR—Senior Surgeon, P.H.S., District Health Officer, Cagayan.
8. MENCIAS, DR. BONIFACIO—Chief, Office of Property, P.H.S., Manila, and Member, Faculty, University of Sto. Tomas, Manila.
9. NAVARRO, DR. JOSE S.—Surgeon, P.H.S., Office of Public Health Education and Publicity, P.H.S., Manila.
10. SERNA, DR. VICENTE DE LA—Senior Surgeon, P.H.S., District Health Officer, Oroquieta, Occidental Misamis.
11. TABLAN, DR. DOMINGO R.—Medical Inspector, P.H.S., District Health Officer, Ilocos Sur.
12. VELASQUEZ, DR. LICERIO—Surgeon, P.H.S., Resident Physician, Cervantes Hospital, Ilocos Sur.
13. VELEZ, DR. FRANCISCO—Medical Inspector, P.H.S., District Health Officer, Albay.
14. VERZOSA, DR. JOSE—Surgeon, P.H.S., Sub-District Health Officer, and Chief, Lubuagan Hospital, Mountain Province.

15. VIDAL, DR. JOSE—Senior Medical Inspector, P.H.S., District Health Officer, Pangasinan.
16. VILLARICA, DR. ISMAEL—Medical Inspector, P.H.S., District Health Officer, Cebu.

1930-1931

1. ANGODUNG, DR. RUPERTO—Surgeon, P.H.S., Assistant District Health Officer, Occidental Negros.
2. BALTAZAR, DR. ANDRES D.—Medical Inspector, P.H.S., (Deceased)
3. BORJA, DR. CRISANTO DE—Practising Physician.
4. CARO, DR. BIENVENIDO P.—Medical Inspector P.H.S., District Health Officer, Tarlac.
5. CASTRO, DR. BRAULO DE—Senior Surgeon, P.H.S., District Health Officer, Marinduque.
6. CORONEL, DR. TIRSO—Medical Inspector, P.H.S., District Health Officer, La Union.
7. CORPUS, DR. MARCOS J.—Medical Inspector, P.H.S., District Health Officer, Pampanga.
8. DIZON, DR. GREGORIO D.—Surgeon, Assistant Chief, Office of Vital Statistics, P.H.S.
9. DYCHITAN, DR. TEODORO—Senior Surgeon, P.H.S., District Health Officer, Isabela.
10. LEGASPI, DR. MARIANO G.—Senior Surgeon, P.H.S., District Health Officer, Palawan.
11. LEON, DR. JOSE DE—Senior Surgeon, P.H.S., District Health Officer, Nueva Vizcaya.
12. LUCERO, DR. VICENTE Q.—Surgeon, P.H.S., Acting City Health Officer, Baguio.
13. OCHOA, DR. ENRIQUE F.—Senior Medical Inspector, P.H.S., District Inspector, Health Inspection District No. 1, La Union and Assistant to the Chief Division of Provincial Sanitation.
14. PASCUAL, DR. ANICIO—Surgeon, P.H.S., District Health Officer, Zambales.
15. SANTIAGO, DR. MARTIN—Surgeon, P.H.S., District Health Officer, Bataan.
16. SOCO, DR. JOSE S.—Practising Physician.
17. TOLENTINO, DR. FRANCISCO A.—Medical Inspector, P.H.S., District Health Officer, Lanao.

1931-1932

1. ALVARADO, DR. PEDRO J.—Senior Surgeon, P.H.S., District Health Officer, Batanes.
2. ARAMBULO, DR. MANUEL—Senior Surgeon, P.H.S., District Health Officer, Sorsogon.
3. CUERPOCRUZ, DR. MACARIO—Medical Inspector, P.H.S., In Charge Urban Health Demonstration Unit, School of Hygiene and Public Health, University of the Philippines.

4. DELES, DR. CRESCENCIANO H.—Senior Surgeon, P.H.S., District Health Officer, Davao.
5. DIY, DR. FRANCISCO T.—Surgeon, P.H.S., District Health Officer, Agusan.
6. FLORENTINO, DR. JOSE—Surgeon, P.H.S., Assistant in charge Meisic Health Station, Manila.
7. FRANCO DR. GALO F.—Temporary Health Officer, Agusan.
8. FUENTES, DR. LEOPOLDO—Senior Surgeon, P.H.S., District Health Officer, Surigao.
9. LAUENGO, DR. PIO—Senior Surgeon, P.H.S., District Health Officer, Oriental Negros.
10. MADARANG, DR. CLEMENTE M.—Senior Surgeon, P.H.S., District Health Officer, Mindoro.
11. MEDINA, DR. RAFAEL—President, 1st Sanitary Division, P.H.S., Surigao, Surigao.
12. NOLASCO, DR. JESUS A.—Medical Inspector, P.H.S., District Health Officer, Oriental Misamis.
13. PATAG, DR. ANTONIO C.—President, 15th Sanitary Division, Guimbal, Iloilo, P.H.S.
(Baylon de la Rama Scholar in Public Health, 1931-1932 and Nichol's Memorial Medalist.)
14. PEÑALOSA, DR. ANICETO—Senior Surgeon, P.H.S., District Health Officer, Cotabato.
15. PEREZ, DR. APOLONIO L.—Surgeon, P.H.S., District Health Officer, Romblon.
16. SOBERANO, DR. FERNANDO—Surgeon, P.H.S., District Health Officer, Camarines Norte.
17. LABORTE, DR. NICOMEDES—Assistant District Health Officer, Iloilo.

The College of Agriculture

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Dean of the College and Director of the Experiment Station: Dr. BIENVENIDO M. GONZALEZ.

Secretary of the College: Dr. FRANCISCO M. FRONDA.

Heads of Departments:

Agricultural Chemistry: Professor FRANCISCO O. SANTOS.

Agricultural Education: Instructor FRANCISCO M. SACAY (In Charge).

Agricultural Engineering: Associate Professor ANASTASIO L. TEODORO (Acting).

Agronomy: Professor NEMESIO B. MENDIOLA.

Animal Husbandry: Professor BIENVENIDO M. GONZALEZ.

Associate Professor VALENTE VILLEGAS (Assistant).

English: Professor EMMA S. YULE.

Entomology: Professor LEOPOLDO B. UICHANCO.

Plant Pathology: Associate Professor GERARDO O. OCFEMIA (Acting).

Plant Physiology: Professor RAFAEL B. ESPINO.

Rural Economics: Assistant Professor JOSE E. VELMONTE (In charge).

Soils: Professor ROBERT L. PENDLETON.

Extension Service: Professor INOCENCIO ELAYDA.

Military Science and Tactics: 1st Lieutenant JOSE E. OLIVARES, 92nd CA (PS) U.S. Army.

Physical Education: Instructor NICOLAS S. MACHAN.

Chief Clerk and Disbursing Officer: Mr. ALFREDO V. YNIGUEZ.

Physician to the College: Dr. SIXTO A. FRANCISCO.

Farm Engineer: Mr. JOAQUIN RUIZ DE ARANA.

Librarian: Mr. QUINTIN A. EALA.

Property Clerk: Mr. CLEMENTE JULIANO.

CHAIRMEN OF STANDING COMMITTEES

Publications: The DEAN.

Curriculum: The SECRETARY.

Graduate Study: The DEAN.

Custodian of Theses: The SECRETARY.

Grounds and Buildings: Associate Professor ANASTASIO L. TEODORO.

Athletics: Professor RAFAEL B. ESPINO, Representative of the College of Agriculture Faculty to the U. P. Board of Athletic Control.

Sanitation: Dr. SIXTO A. FRANCISCO.

College Mess: Professor FRANCISCO O. SANTOS.

Social Affairs: Assistant Professor MIGUEL MANRESA.

Library: Professor LEOPOLDO B. UICHANCO.

Student Welfare: Assistant Professor DEOGRACIAS V. VILLADOLID.

BUSINESS DIRECTORY

OFFICE OF THE DEAN AND DIRECTOR: Room 1, Administration Building, Agricultural College, Laguna, P. I.

OFFICE OF THE SECRETARY: Room 2, Administration Building, Agricultural College, Laguna, P. I.

THE FACULTY OF INSTRUCTION

BIENVENIDO M. GONZALEZ, B.Agr., M.S. Sc.D.,

Dean, Director ex-officio, Experiment Station, Professor and Head of the Department of Animal Husbandry.

INOCENCIO ELAYDA, B.S.A., M.S.A.,

Director of Extension Service (with rank of Professor).

RAFAEL B. ESPINO, B.Agr., Ph.D.,

Professor and Head of the Department of Plant Physiology.

REGINALD H. KING, B.S., M.S.S.T.,

Professor of Sugar Technology.

NEMESIO B. MENDIOLA, B.S.A., M.S.A., Ph.D.,

Professor and Head of the Department of Agronomy.

ROBERT L. PENDLETON, B.S., Ph.D.,

Professor and Head of the Department of Soils.

MANUEL L. ROXAS, A.B., B.S.A., M.S.A., Ph.D.,

Emeritus Professor of Agricultural Chemistry.

FRANCISCO O. SANTOS, A.B., M.S., Ph.D.,

Professor and Head of the Department of Agricultural Chemistry.

LEOPOLDO B. UICHANCO, B.S.A., M.S.A., M.S.(Zoöl.), Sc.D.,

Professor and Head of the Department of Entomology.

EMMA S. YULE, B.Di.,

Professor and Head of the Department of English.

ANTONIO I. DE LEON, B.S., M.S., Ph.D.,

Associate Professor of Agricultural Chemistry.

GERARDO O. OCFEMIA, B.Agr., M.S.A., Ph.D.,

Associate Professor and Acting Head of the Department of Plant Pathology.

ANASTASIO L. TEODORO, B.Agr., M.S., Ph.D.,

Associate Professor and Acting Head of the Department of Agricultural Engineering.

VALENTE VILLEGAS, B.Agr., Ph.D.,

Associate Professor and Assistant Head of the Department of Animal Husbandry.

- ALEJANDRO B. CATAMBAY, B.Agr., B.S.A., M.S.A.,
Assistant Professor of Agricultural Engineering.
- ANNA F. COLE, A.B.,
Assistant Professor of English.
- PEDRO A. DAVID, B.Agr., B.S.A., M.S.A., Ph.D.,
Assistant Professor of Agronomy.
- SIXTO A. FRANCISCO, M.D.,
College Physician and Director of U. P. Los Baños Infirmary (with rank of Assistant Professor).
- ELVIE B. FRASER, B.Ped.,
Assistant Professor of English (U.P.R.H.S.).
- FRANCISCO M. FRONDA, B.Agr., M.S., Ph.D.,
Assistant Professor of Poultry Husbandry and Secretary of the College.
- LEON G. GONZALEZ, A.B., B.S.A., M.S.A., Ph.D.,
Assistant Professor of Agronomy.
- MIGUEL MANRESA, D.V.M., Ph.D.,
Assistant Professor of Animal Husbandry.
- MARIANO MONDOÑEDO, B.S.A., D.V.M.,
Assistant Professor of Animal Husbandry.
- JOSE E. OLIVARES, M.S.E.E., 1st Lieut. 92nd CA (PS) U.S. Army,
Assistant Professor of Military Science and Tactics.
- MANUEL A. ROA, A.B., B.S.,
Assistant Professor of Mathematics.
- JOSE E. VELMONTE, A.B., B.S.C.,
Assistant Professor and In Charge of the Department of Rural Economics.
- DEOGRACIAS V. VILLADOLID, B.Agr., B.S.A., M.S.A., Ph.D.,
Assistant Professor of Agricultural Zoology.
- BENEDICTO C. DE LAS ALAS, B.Agr., B.S.A.,
Instructor in Mathematics.
- ANDRES P. AGLIBUT, B.S.A.E., M.S.,
Instructor in Physics (U.P.R.H.S.).
- DIONISIO I. AQUINO, B.Agr., B.S.A., M.S., Ph.D.,
Instructor in Soil Technology.
- VICENTE B. ARAGON, B.Agr., B.S.A.,
Instructor in Agronomy.
- EULALIO P. BALTAZAR, B.S.A., M.S.A.,¹
Instructor in Agronomy.
- JULIAN BANZON, B.S.(Chem.),
Instructor in Agricultural Chemistry.
- ENRIQUE M. BAUTISTA, B.S.C.E.,
Instructor in Agricultural Engineering.
- GENARO C. BERMEJO, B.S.S.T.,
Instructor in Agricultural Chemistry.

¹On special detail in the U. S.

TEODOSIO BUENAVENTURA, LL.B.,

Instructor in History and Spanish.

VALERIANO C. CALMA, B.Agr., B.S.A., M.S., Ph.D.,

Instructor in Agronomy.

JOSE M. CAPINPIN, B.Agr., B.S.A., M.S.A., M.A., Ph.D.,

Instructor in Agronomy.

SILVERIO M. CENDAÑA, B.Agr., B.S.A.,¹

Instructor in Entomology.

ESTEBAN G. COLLADO, B.Agr., B.S.A., M.S.A.,

Instructor in Agricultural Chemistry.

PAULINO E. COSTA, B.S.,

Instructor in Horticulture (U. P. R. H. S.).

RAMON A. CRUZ, B.Agr., B.S.A.,

Instructor in Agricultural Chemistry.

SANTIAGO R. CRUZ, B.S.M.E., B.S.E.E.,

Instructor in Physics.

VICENTE M. DAWIS, B.Agr., B.S.A., (Certificate in Ag. Ed.),

Instructor in Agronomy.

LEANDRO S. EBRO, B.S.M.E., M.S.M.E.,

Instructor in Sugar Engineering.

JOSE P. ESGUERRA, B.Agr., B.S.A.,

Junior Animal Husbandman (with rank of Instructor).

NICOLAS GALVEZ, B.S.,²

Instructor in Agricultural Chemistry.

JOSE B. JULIANO, B.S.A., M.S.A., Ph.D.,

Instructor in Plant Physiology.

PABLO N. MABBUN, B.S.A.,¹

Instructor in Rural Economics.

NICOLAS S. MACHAN, LL.B.,

Assistant Physical Director.

PEDRO MONTELLANO, B.Agr., B.S.A., M.S.,

Instructor detailed from the Bureau of Education to the Department of Agricultural Education.

ELISEO K. ONGSANSOY, B.S.M.E.,

Instructor in Agricultural Engineering.

FERNANDO DE PERALTA, B.Agr., B.S.A., M.S.A.,³

Instructor in Plant Physiology.

ANTONIO L. ROCAFORT, B.Agr., B.S.A.,⁴

Instructor in Physics (U. P. R. H. S.).

¹ On leave in the United States as U. P. Fellow.

² On special detail in Germany.

³ On special detail in the U. S.

⁴ On leave.

- EMILIANO F. ROLDAN, B.Agr. B.S.A., M.S.A., M.A.,
Instructor in Plant Pathology.
- FRANCISCO M. SACAY, B.Agr., B.S.A., M.S., Ph.D.,
Instructor and In Charge of the Department of Agricultural Education.
- FELIX B. SARAO, B.S.A., M.S.,
Instructor in Animal Husbandry.
- FLORENCIO A. SOLIVEN, B.Agr., B.S.A., M.S.A.,
Instructor in Agricultural Chemistry.
- ALEJO TALEON, B.S.A., M.S.A.,
Instructor in Animal Husbandry.
- KATHERINE M. TURNER, B.L.,
Instructor in English.
- LEOPOLDO J. VILLANUEVA, B.Agr., B.S.A., M.S.,
Instructor in Agricultural Chemistry.
- LAURA MAE WILLIAMSON, A.B.,
Instructor in English (U. P. R. H. S.).
- MARCELO V. ARNALDO, B.S.A.,
Assistant in Rural Economics.
- ENGRACIO BASIO, B.Agr.,
Assistant in Animal Husbandry.
- JOSE BONDOC, B.Agr., B.S.A.,
Assistant in Agricultural Engineering.
- SANTIAGO R. CAPCO, B.S.A.,
Assistant in Entomology.
- MARTIN S. CELINO, B.S.A.,
Assistant in Plant Pathology.
- ARSENIO Y. CORONEL, B.Agr., B.S.A.,
Assistant in Entomology.
- ROMAN P. ESTIOKO, B.Agr., B.S.A.,
Assistant in Plant Physiology.
- OLIMPIO GARCIA, B.S.(Chem.),
Assistant in Agricultural Chemistry.
- GETULIO A. GUANZON, B.S.A., (Certificate in Sugar Technology),¹
Assistant in Sugar Technology.
- JESUS J. DE GUZMAN, B.Agr.,
Assistant in Agronomy.
- HONORATO E. LUMANG, B.Agr., B.S.A.,
Assistant in Agricultural Chemistry.
- JESUS P. MAMISAO, B.Agr.,
Assistant in Physics.

¹ On leave in the United States as U. P. Fellow.

- MAMERTA MANAHAN, Phar.Chem.,
Assistant in Agricultural Chemistry.
- ANDRES M. MANE, B.Agr., B.S.A.,
Assistant in Agricultural Zoölogy.
- RICARDO T. MARFORI, B.Agr.,
Assistant in Agricultural Chemistry.
- VICTORIA B. MENDIOLA, B.S.A.,
Assistant in Plant Pathology.
- TORIBIO MERCADO, B.Agr., B.S.A.,
Assistant in Agronomy.
- MANUEL R. MONSALUD, B.S.S.T.,
Assistant in Agronomy.
- TEOFILO F. NOVERO, B.Agr., B.S.A.,
Assistant in Agronomy.
- FELICIANO PANTALEON, B.Agr., B.S.A.,
Assistant in Plant Physiology.
- NAZARIO PIDLAOAN, B.Agr.,
Assistant in Agricultural Chemistry.
- RAFAEL B. ROTOR, B.Agr., B.S.A.,
Assistant in Rural Economics.
- AMBROSIO P. SAN PEDRO, B.S.A., M.S.A.,
Assistant in Agronomy.
- JOSE A. SERRANO, B.Agr., B.S.A., (Certificate in Ag. Ed.),
Assistant in Agronomy.
- CLEMENTE E. YANGO, B.Agr., B.S.A., (Certificate in Ag. Ed.),
Assistant in Agronomy.
- LAURO YNALVEZ, B.Agr.,
Assistant in Agricultural Chemistry.
- EUGENIO A. AGUDO, B.Agr., B.S.A.,
Assistant Instructor in Animal Husbandry (U. P. R. H. S.).
- FRANCISCO BARROS, B.S.A., (Certificate in Ag. Ed.)
Assistant Instructor in Farm Crops (U. P. R. H. S.).
- NICANOR M. CASTILLO, B.Agr., B.S.A., (Certificate in Ag. Ed.),
Assistant Instructor in Mathematics (U. P. R. H. S.).
- SISENANDO REANTASO, B.Agr., B.S.A.,
Assistant Instructor in Science (U. P. R. H. S.).
- ALBINO P. VARONA, B.S.A., (Certificate in Ag. Ed.),
Assistant Instructor in Farm Management (U. P. R. H. S.).

THE COLLEGE OF AGRICULTURE

GENERAL INFORMATION

HISTORY

The College of Agriculture was the first college to be organized as a part of the University. Class work in the college began in June, 1909. During this year Dean Copeland brought to the site of the College twelve students, and the classes met in tents borrowed from the Bureau of Education. In October, 1909, the first building was completed. The enrollment at the end of the first year was fifty-six. It was necessary for the faculty and students of that time to literally carve the institution out of the wilderness. This work in the early years was prodigious and the College stands as a permanent monument to these pionéers. From its very small and dubious beginning the institution has grown constantly until it now maintains a registration of eight hundred one students, in both collegiate and high school departments, presents over one hundred and sixty-four courses of instruction divided into three curricula and has a faculty of ninety-four members. At the present time, it is the only fully developed University College of Agriculture in the Tropics.

LOCATION

The College of Agriculture is located on a first-class road, sixty-eight kilometers from Manila, four kilometers from the town of Los Baños and two kilometers from the College (Junction) Station on the Manila-South Railroad. It is readily accessible by motor car, and by the southern branch of the railroad.

ORGANIZATION

The College of Agriculture is organized to pursue the following main lines of activity: resident instruction, research, extension, and certain subsidiary coöperative services.

Resident instruction embraces eleven general departments: Agricultural Chemistry, including Sugar Technology; Agricultural Education; Agricultural Engineering, including Mathematics and Physics; Agronomy, including Horticulture, Farm Management, and Genetics; Animal Husbandry, including Poultry Husbandry; English, including Modern Languages; Entomology, including Zoölogy; Plant Pathology; Plant Physiology; Rural Economics, including Farm Accounting; and Soils. Administration of instruction rests in the faculty and the Dean.

Research is carried on by the eleven departments acting for the Experiment Station. Administration of research rests in the Dean of the College, who is ex-officio Director of the Experiment Station.

The extension activity is sporadic and still unorganized. In 1921 this important function was placed in the hands of a director, who for this purpose acts under the direction of the Dean with the coöperation of the various departments of the College.

Service embraces: transportation, building construction, maintenance of property, and water and light service,—all under the Service Division in coöperation with the Department of Agricultural Engineering; maintenance of farm and campus under the Department of Agronomy; sanitation and health under the immediate jurisdiction of the College Physician; graduate study, library, publications, curricula, athletics, and social activities administered by the Faculty. In all service arms the Dean maintains active authority.

Administration of College functions is effected by the Dean and Director through four entities; the College Secretary, Service Division, Chief Clerk and Disbursing Officer, and Property Clerk.

The College of Agriculture interlocks with the College of Veterinary Science as follows:

General subjects of instruction are given for both Colleges by the College of Agriculture; Veterinary subjects prescribed by the Head of the Department of Animal Husbandry are given by the College of Veterinary Science. A similar arrangement is carried out with the School of Forestry on some subjects.

EQUIPMENT

The College of Agriculture occupies and operates 397 hectares of land at the foot of Mount Maquiling, near Laguna de Bay, in the province of Laguna. Mount Maquiling and its foothills are held under the Bureau of Forestry as a Government reserve and this reserve constitutes the National Botanic Gardens.

The College has twenty-two concrete buildings of permanent character and several temporary wooden and light material structures. The scientific departments are well equipped to carry on essential instruction and research activities in tropical agriculture.

The Department of Agricultural Chemistry has a model small-scale sugar mill so complete as to enable the students to study each process in the manufacture of sugar and to perform "going" exercises in sugar technology.

This department maintains a chemical Laboratory for the analysis of foodstuffs, soils, fertilizers, and similar products used in investigational work of thesis students and members of the faculty not only of the Department of Agricultural Chemistry but of all other technical departments in the Associated Colleges.

The Department of Agricultural Education was organized in 1929. A Rural High School is maintained to which intermediate school graduates are admitted for agricultural training. This school is also used as a training school for the students specializing in the department. Very close coöperation is maintained with the Bureau of Education and it is expected that graduates with certificates in Agricultural Education will be especially fitted for positions in agricultural teaching service.

The Department of Agricultural Engineering coöperates with the Service Division in the maintenance of a water system by which pure mountain water is delivered underground to all parts of the Campus, and an electric light plant supplying light to residences and halls and power for the laboratories, and operates well-equipped shops for instruction, construction, and repair.

This department also coöperates with the Service Division in the construction and maintenance of all buildings, roads, and bridges on the College Campus.

The Department of Agronomy possesses an equipment of well-selected tools, machine plows and cultivators, and three tractors. This department maintains a large number of cultures in constant progress and permanent plantings totalling about 25,000 trees and shrubs. It is in charge of the maintenance and improvement of the College of Agriculture Economic Botanical Garden and of the work of beautification of the Campus. The department operates for instruction purposes and for the proper disposal and marketing of its farm products a cassava starch and coffee factory and a copra drier.

The Department of Animal Husbandry maintains herds of Native, Indian, Holstein, and Hereford cattle, carabaos, Indian buffaloes, swine, sheep, goats, and poultry.

The Department of Entomology possesses extensive and well-arranged collections. This department maintains extensive coöperative relations with the United States Department of Agriculture, the Hawaiian Sugar Planters' Association, the Philippine Sugar Association, and with local Bureaus. The Los Baños Limnological Station, which is located on the shore of Laguna de Bay in the barrio of Mayondon, about three kilometers from the Campus, is equipped for the study of freshwater biota. It has a laboratory building, motor boat, fishing gear, and other facilities.

The Department of Plant Pathology is well equipped for its work. This department possesses, by gift, the Baker Indo-Malayan Mycological Collection.

The Department of Plant Physiology, in addition to other equipment, possesses an herbarium of above 20,000 sheets bearing largely on the local flora, and in part the gift of the late Dean Charles Fuller Baker.

The former Division of Soils of the Department of Agronomy was raised to the status of a department by action of the Board of Regents

on July 10, 1930. This department has a large collection of Philippine and Oriental soil samples and soil survey maps. It is particularly equipped for the field study of soils and making of soil surveys.

The Library of the College of Agriculture is located in the Administration Building. On its stacks are a collection of 12,006 volumes, 2129 pamphlets, 553 manuscripts (theses), and an assortment of maps. Its periodical resources consist of 103 paid subscriptions, 229 exchanges, and 215 journals and other serial publications mostly on agricultural and scientific subjects. (The exchanges are received for the *Philippine Agriculturist*). This collection is classified according to the Library of Congress scheme, Library of Congress printed cards being used in the catalogue.

The value of the entire plant of the College of Agriculture is about ₱1,120,000. The present annual cost for one student averages about ₱500.

EXPERIMENT STATION

The Experiment Station of the College of Agriculture was established by Act No. 2730 of the Philippine Legislature and consists of approximately 300 hectares of land. The Dean of the College of Agriculture is Director of the Experiment Station. Since the establishment of the station, no funds have been appropriated for its operation. The present development of the station has been achieved through savings from funds primarily educational. Much has been accomplished in the station through vigorous departmental activity.

THE PHILIPPINE AGRICULTURIST

The Philippine Agriculturist was established in 1909 and has issued continuously to the present as the official organ of the college. The year's volume consists of ten numbers totalling 500 to 600 pages. It has published over 9,000 pages of original investigations by faculty and students of the College. The Student Body Association has voluntarily made subscription to the journal a prerequisite to membership.

THE CHARLES FULLER BAKER MEMORIAL PROFESSORSHIP

The Charles Fuller Baker Memorial Professorship was established by action of the Board of Regents on September 29, 1927 in honor of the memory of Charles Fuller Baker and as a tribute to his work in the College of Agriculture as Professor of Tropical Agriculture, 1912-17, and as Dean, 1917-27. The purpose of the professorship is to bring to the College of Agriculture specialists in the sciences represented in the curriculum of this college. The incumbent, whose time is one year, is furnished transportation from his residence to the College and funds for limited travel while in the Philippines are provided.

LIFE OF STUDENTS

The students of the College of Agriculture are housed in four ways: (1) in Government dormitories of which there are twelve, housing from eight to forty students each; (2) in the Y. M. C. A. and Mission dormitories; (3) in club houses built and owned by the students; and (4) in boarding and lodging houses in the Coconut Grove, San Antonio, and Los Baños.

The College operates Molawin Hall to which student boarders are admitted at reasonable rates. The Cine Molawin which furnishes moving picture entertainments one evening a week is also operated under this management.

Faculty and students of the College own and operate the College Cooperative Co., Inc., which sells textbooks, school supplies, clothing, and groceries.

All students are members of the Student Body Association which maintains effective control over all parochial, social, and athletic activities and assists effectively in the general discipline of the institution, constituting to a large degree a very democratic and practical self-governing community.

There is a Protestant and a Roman Catholic chapel on land adjoining the Campus.

The average living expenses of the College students fall between ₱20 and ₱25 a month. About one-fifth of the students work their own way, largely, as student laborers and assistants on the College pay roll. Many more are partially self-supporting. Students registering in the College should in all cases come prepared to pay the necessary fees as prescribed in General Information Bulletin and should be prepared with funds sufficient for expenses for at least the first four months, as it generally takes some time for the average student to get on a self-supporting basis.

The Bailon de la Rama Scholarship is open to students in the Sugar Technology Course. It is awarded through a competitive examination open to students qualified to register in the Sugar Technology Course. The holder retains the scholarship until graduation, unless he is disqualified. The scholarship carries thirty-five pesos (₱35) a month, in addition to an allowance of seventy-five pesos (₱75) a semester for fees, books and clothing.

The Baker Memorial Scholarship is awarded annually to a student regularly registered in the Senior Class. This student must be wholly or partly self-supporting. The recipient is selected by the College Committee on Baker Memorial Scholarship on the basis of character, promise of future usefulness, and scholarship. At the discretion of the Committee the scholarship may be divided between two or more students. The scholarship represents the income from the Baker Memorial Scholarship Fund which has been raised by voluntary contributions from many different parties in the Philippines and abroad. In 1931-1932, the amount awarded was ₱126.00.

RENTAL RATES

Rooms in the College cottages and dormitories are rented at ₱2.45 to ₱3.45 a month for each occupant. Three or four persons may be assigned to one room. All bills are payable monthly in advance.

MEDICAL ATTENDANCE

On June 14, 1930, the U.P. Los Baños Infirmary was formally opened to the public. This Infirmary is under the direct charge of the College Physician who acts as its Director. The College employs a staff of three graduate nurses and a part-time pharmacist. A visiting surgeon is also employed. Cases of illness are treated locally. No charge is made for local service or ordinary medicine furnished. Regularly enrolled students are admitted free to the Infirmary.

Dental service is available to students. A visiting dentist holds clinic in the Infirmary three times a week. Fees for this service are for the work performed.

REGULATIONS

ADMISSION

Applicants for admission to the College of Agriculture must present themselves in person to the Secretary during the period of registration, pass a physical examination to the satisfaction of the College Physician, make a deposit of ₱15 with the Disbursing Officer, pay in advance the incidental fees, and present scholastic credentials to the Secretary on one of the following bases:

(1) Bureau of Education forms or certificates, or University of the Philippines Form 1 showing completion of a high school or secondary course including; Mathematics, 2½ units (Algebra, 1½ units and Plane Geometry 1 unit); Biology, Botany, or Zoölogy or a combination thereof, 1 unit; English, 5 units; History, 2 units; Physics, 1 unit and Electives, 4½ units. If in the judgment of the Secretary the credentials are satisfactory, applicants on this basis are admitted to the common first year of the College of Agriculture General Course.

(2) Candidates for the degree of Master of Science are admitted in accordance with the rules of the University.

(3) Special students, not to become candidates for degrees, are admitted at the pleasure of the Dean of the College.

(4) Entrance deficiencies must be made up within one year.

ADMISSION TO ADVANCED STANDING

When a student matriculates in this College, he shall be granted advanced credit upon presentation of credentials showing that he has attended and passed in some other institution of collegiate standing courses fully equivalent to those in this University for which advanced credit is sought. Advanced credit may be either general or specific; provided that whenever specific credit is awarded, the person making the award should name the particular subject or subjects for which advanced credit is given.

Advanced credit may be awarded either by the Registrar or by the heads of departments concerned; provided that the Registrar shall award advanced credit only to students who have graduated from an institution recognized by the University Council and only for those subjects listed in the course or courses duly recognized. The heads of the departments

concerned shall award advanced credit to all applicants from unrecognized institutions, and to those from recognized institutions who have taken part of, but have not completed, the entire courses recognized; provided that the award of advanced credit by a department head shall be made only at the request of the Dean of the college and upon the applicant passing an examination given by the head of the department.

Applications for advanced credit shall be made to the Registrar or to the Dean of the college not later than July 15 after matriculation. Upon receipt of an application, the Dean shall cause the proper department head to examine the applicant or applicants. This examination shall be held on or before July 31, and its result shall be reported to the Dean and the Registrar not later than August 1 of the same year. Students who fail to take these examinations in the first year of their residence, may do so the following year, but no examination for advanced credit may be held between August and May of each year, unless specially authorized by the faculty.

Provided, however, that no advanced credit shall be counted towards graduation within the same academic year in which the advanced credit is given, except in the case of students admitted to the last year of any course, and in that case the total units of advanced credit that may be granted shall not exceed the equivalent of one academic year's work. In the case of students taking a three-year course, no advanced credit for more than two years of academic work or its equivalent shall be granted, and three years of academic work or its equivalent in the case of students admitted to a four-year course, etc.

ADVISERS

The Secretary serves as adviser for all students until they have elected their major, from which time they are advised by their major professors.

CLEARANCE OF COURSE

Students are required to clear records in all previous work before registering for their third collegiate year in any curriculum. Exceptions to clearance may be granted by the Secretary in the case of special students, of regular students when a conflict of two or more subjects occurs, or of students in advance of their class.

DEGREES

Upon completion of the requirements in any one of the curricula and the presentation of property clearance, the student is recommended to the University Council, and through that body to the Board of Regents of the University of the Philippines for graduation with degree as follows:

(1) For the College of Agriculture General Curriculum, the degree of Bachelor of Science in Agriculture.

(2) For the Sugar Technology Curriculum, the degree of Bachelor of Science in Sugar Technology.

(3) A certificate in Agricultural Education is granted in addition to the degree of Bachelor of Science in Agriculture to such students as have completed the requirements for the course in Agricultural Education.

DIVISION OF COURSES

Courses which are complete either semester and year courses carry a numerical designation, such as Agronomy 1, Agronomy 3, Plant Physiology 2, etc. In such courses only one final rating and credit is given.

Courses which are given in two semestral parts carry a numerical and literal designation, such as English 1a, English 1b, etc. In such courses credit may be obtained for either part separately, only a student without credit in first part cannot register for second part.

ELECTION OF CURRICULUM

The student who enrolls in the College discovers that there are two curricula open to him: the Bachelor of Science General Curriculum and the Bachelor of Science in Sugar Technology Curriculum. The first year of these curricula are identical and the student is not required to make immediate choice. Election is deferred until the beginning of the second year. Upon completion of the common first year course, the student may select the Sugar Technology Curriculum, and be classified as Freshman in that course, provided he meets the requirements prescribed for admission thereto.

EXAMINATIONS

Five types of examinations are conducted under the following general regulations:

Advanced standing examinations.—The Dean requires any student claiming advanced standing to submit to a formal or informal examination to prove the claim, regardless of documentary evidence.

Final examinations.—Each formal course in the College ends with a written examination from which no exemption may be granted for any cause. A student absent from the final examination receives a rating of 5 in the course unless excused for valid reasons (illness, conflicting schedule) by the Dean, in which case he receives a rating of 4 in the course and is required to present himself with written permission from the Dean for a subsequent condition or special examination.

Condition examinations.—Condition examinations are given for year courses and second semester courses during the week preceding the opening of first semester of the school year and for first semester courses during the week of December subsequent to the close of the first semester. Condition examinations are open to students who have received the rating of 4 because of excused absence from final examination or because of poor work in the course. Passing the condition examination satisfactorily raises the rating from 4 to 3. Failure to take or to pass the required condition examination lowers the rating from 4 to 5. All deficiencies must be made up within one year.

Special examinations.—Special examinations may be granted by the Dean for any purpose which he may indicate except that a student who has taken a condition examination and failed, may not be examined again in

the course until he shall have repeated the entire course. The student is required to pay a fee of ₱10 for each special examination unless the same is remitted by the Dean in the case of a student excused from final examination because of illness, conflicting schedule, or other causes in which the student may not have been at fault.

Oral examinations.—Oral examinations for the Master's degree are scheduled and conducted by the Committee on Graduate Studies.

FEES

Tuition fee.—No tuition fee is charged in the College of Agriculture, except the following incidental and laboratory fees: Entrance fee—₱5 to be paid upon student's admission to the University; Registration fee—₱5 a semester; Library fee—₱5 a year; athletic fee—₱1.50 a semester; Student Council—₱0.50 a semester; medical fee—₱2 a semester. Laboratory fees: (1) Chemistry 1—₱15; (2) Physics 1—₱5; (3) Plant Physiology 1—₱10; (4) Zoölogy—₱10. Deposit ₱15.00. The educational opportunities are offered free to all students, foreign or native.

Student body fee.—Every student has to pay a fee of ₱0.40 a year as part of fund to finance authorized student college activities. This fund is in the charge of the Student Body of the College of Agriculture.

Subscription to The Philippine Agriculturist.—Every student is required to pay ₱4 for one year's subscription to support this College Journal.

For further particulars regarding fees, see General Information Bulletin.

HONORS

The College of Agriculture grants honors and distinctions to students who qualify under the rules given below.

Cum laude.—The distinction *cum laude* shall be publicly declared and entered on the diploma of each student, a candidate for the degree of *Bachelor of Science in Agriculture* or *Bachelor of Science in Sugar Technology*, who: (1) shall have taken three-quarters of the total units of credit required for the degree in the College of Agriculture; (2) shall have received no rating of 4 or 5 in any course taken in the College of Agriculture, whether or not such course is presented for degree; (3) shall have an average rating of from 2 to 1.24 inclusive in all work presented for degree; and (4) shall have any required thesis or theses duly approved.

The average rating shall be computed by multiplying the rating in each course taken in the College of Agriculture and presented for degree, except thesis, by the number of units carried by such course; adding the products so obtained; and dividing the sum of the products by the total number of units carried by all courses taken in the College of Agriculture and presented for degree, except thesis. In computing the average rating, if a student shall have more free electives, that is, electives not prescribed for major, than need be presented for degree, such free electives or combination of free electives which will result in the most favorable average rating shall be taken. The number of free electives considered for degree shall not be greater than necessary to complete the total number of units less the number of units carried by thesis required for the degree sought.

Computation of average rating shall be made by the Secretary and presented to the faculty, who shall be free to determine the accuracy of the same.

Magna cum laude.—The distinction *magna cum laude* shall be publicly declared and entered on the diploma of each student, a candidate for the degree of *Bachelor of Science in Agriculture* or *Bachelor of Science in Sugar Technology*, who: (1) shall have taken three-quarters of the total units of credit required for the degree in the College of Agriculture; (2) shall have received no rating of 4 or 5 in any course taken in the College of Agriculture, whether or not such course is presented for degree; (3) shall have an average rating of from 1.24 to 1 inclusive in all work presented for degree; and (4) shall have any required thesis or theses duly approved. The average rating shall be computed as for the distinction *cum laude*.

Summa cum laude.—The distinction *summa cum laude* shall be publicly declared and entered on the diploma of each student, a candidate for the degree of *Bachelor of Science in Agriculture* or *Bachelor of Science in Sugar Technology*, who: (1) shall have taken all units of credit required for the degree in the College of Agriculture; (2) shall have received the rating of 1 plus no fraction in all courses taken in the College of Agriculture, whether or not any such course is presented for degree; and (3) shall have any required thesis or theses duly approved.

Faculty Medal of Merit.—The "Faculty Medal of Merit" shall be publicly declared but not entered on the diploma of such one student who, having completed all requirements for the degree of Bachelor of Science in Agriculture or Bachelor of Science in Sugar Technology, shall be selected by a committee of the Faculty of the College of Agriculture consisting of the Dean, the Secretary, the Heads and Acting Heads of all departments of the College. The selection shall be based on scholarship, accomplishment in athletics, qualities of leadership, moral character, manliness, and promise of good citizenship.

The Joaquin J. Gonzalez Medal.—Mr. Joaquin J. Gonzalez of Apalit, Pampanga, an alumnus, established in 1925 a medal to be awarded upon recommendation of the faculty to the graduating student who has the highest academic average for his entire course. The average is computed in the same manner as for *cum laude*. The medal is not necessarily awarded every year.

MAJORS

The majors are prescribed by the Head of the department in which the student makes his election. Election of major in any curriculum must be made at or prior to the beginning of the student's third year of college work. At this time the head of the department in which the student has elected to major will prescribe a definite schedule of courses covering the thirty-two units and including a thesis carrying ten units. Students in the Sugar Technology Curriculum have no major nor elective subjects.

PRESCRIBED ELECTIVES

The required prescribed electives covering sixteen units are to be assigned by the Head of the Department under which the student is majoring. Students who have been admitted to the teacher training course may take these electives in Agricultural Education with the consent of the Head of Department under which they are majoring.

The College of Agriculture does not obligate itself to continue any course unless 5 or more students are registered therein.

MEMORANDUM GRADES

Memorandum grades are reported for each student in all courses except those numbered 99, 100, 199, and 300 and Sugar Technology 7 on the following approximate dates: August 1; September 1; October 1; December 1; February 1; and March 1. On the basis of these grades the scholarship rules are enforced. Failure of a department to report any memorandum grade results automatically in the recording of a 5.

MILITARY SCIENCE

Military Science and Tactics is a required subject in the curricula of all the colleges of the University. It is a prerequisite for graduation and must be completed during the first two years of residence in the University.

PHYSICAL EDUCATION

All students are required to take physical education during their first three years in the University unless exempted. Illness or physical disability will be cause for granting exemption. Applications for exemption, with a certified statement from the College Physician, should be submitted to the Department of Physical Education not later than two weeks from the day of registration. The Director may require any student to have a medical or physical examination or both from time to time. Any student who willfully refuses to report for physical education shall be subject to disciplinary action.

During their freshman year the students will take two hours a week of physical education; one hour lecture in personal and community hygiene and the other hour, recreational games. The Sophomores and Juniors will take one hour a week of recreational games and athletics.

Eight semesters of credit must be secured in Physical Education for the satisfactory completion of the course. These credits are determined on the basis of attendance and effort and the attainment of certain standards of growth and development, physical efficiency, and knowledge of the rules, principles, and the practice of right living.

PREREQUISITES

Prerequisites for any course unless designated in the description thereof are determined as follows: (1) General prerequisites constitute all subjects of the same department assigned in the regular curricula for a previous year. These prerequisites may be set aside by the Dean upon recommendation of the Secretary. (2) For any subject not required in any curriculum, prerequisites are at the pleasure of the head of the department in which the subject is given.

PROPERTY CLEARANCE

Before leaving the Campus of the College of Agriculture at the end of the school year; when severing connection with the College, or upon being sent out by suspension, expulsion, or for physical disability, a student is required to obtain a property clearance from the head of each department, the librarian, storekeeper, property officer, the secretary, and the disbursing officer of the college. Failure to accomplish clearance renders a student liable to civil action.

RATINGS

See General Information Bulletin.

SCHOLARSHIP RULES

Changes in Registration.—Changes in registration except for compulsory dropping of courses are not permitted after July 15 of the current year in first semester or year courses, or after November 15 in second semester courses.

Dropping of Courses.—Dropping of courses is accomplished by: (1) Election of the student on or before July 15 or November 15 of the current school year. In this case no rating is given for the subject. (2) Compulsion initiated by the Dean, Secretary, or the adviser of the student concerned because of illness, outside work, or ill-advised registration. In this case no rating is given for the subject. (3) Compulsion initiated by the Secretary or Dean because of delinquency. In this case a final rating of 5 is recorded.

Delinquency.—An average of ratings and check is made on the basis of June and July, and August reports of instructors, and at least every three months thereafter. If at any such period a student has an average rating of 5 in one course or of 4 in two courses he is designated as delinquent and receives first warning. Students who have been designated under any form of delinquency in another branch of this University will be subject to the same rules that apply to delinquent students in this College.

Probation.—If a student delinquent in any course does not show marked improvement therein at the next subsequent check period he is dropped from the course, receives a final rating of 5 therein, is placed on probation, and receives second warning. Students on probation may not continue in the employ of the College either as assistants or laborers. No student will be allowed to take any course the third time except by permission of the Dean.

Extreme Delinquency.—Extreme delinquency is designated for those students who at any check period have an average rating of 5 in two courses, 5 in one course, and 4 in two courses, or 4 in four courses, or 4 or 5 in all their courses. A student under this designation need not have been previously under *delinquency* or on *probation*. Students designated under extreme delinquency are suspended from the College for a period of one year. A student who has been designated under *extreme delinquency* for the second time will not be readmitted to the College, except upon express authority of the faculty. Any student who has been on the extreme delinquency list for the second time may not apply for reinstatement until after the expiration of the period (one year) of his suspension as provided by these scholarship rules.

Removal of Extreme Delinquency.—For suitable cause the Dean of the College may release a student from the penalty of extreme delinquency, but the student remains so designated until his scholarship shows marked improvement.

SPECIAL PROBLEM COURSES

Each department, except the Department of English, describes a course under the number 99 which has for its purpose the accomplishment by the student of an assigned problem in investigation, verification, completion, or collection. A satisfactory report is required to complete the course. The 99 courses are not elective but must be assigned by the department head with the approval of the Dean. Such courses may carry from one to six units of credit as may be granted by the head of the department with the approval of the Dean. In case of unsatisfactory results credit will not be allowed.

UNDERGRADUATE THESES

Each major includes a thesis based upon original investigation by the student, approved by the faculty and reported under the number 100. A thesis carries a credit of ten units in each curriculum. The thesis outline must be presented by the student to the Secretary on call through the head of the department. The preliminary outline is approved by the Dean before the student begins his actual work on the thesis. The thesis may cover one or two years and may include one or two summer assignments. The report of investigation is prepared under the adviser in all matters of form according to TRELEASE and YULE—*Preparation of Scientific and Technical Papers*. A preliminary typewritten copy is passed through the adviser, the head of the department, a critic, and the Department of English and the Dean; if accepted, four typewritten copies are deposited with the Custodian of Theses at least ten calendar days prior to the student's graduation.

UNITS

The unit or semester hour of credit in the College of Agriculture is defined as one lecture, recitation, or quiz of fifty minutes duration or the equivalent thereof in laboratory, field, or shop work. Laboratory, field or shop work is credited at the rate of one unit for each three-hour period, part or all of one hour of which may be assigned outside of class hours, such as field trips or specimen collecting.

WEEK-HOURS

The week-hour as used in the schedule of curricula is equivalent to one period of fifty minutes weekly in lecture, recitation, quiz, laboratory, shop, or field required in formal instruction. No week-hour requirement is designated for theses, special problems, and some of the more advanced instruction in which the work is primarily research.

DESCRIPTION OF COURSES

DEPARTMENT OF AGRICULTURAL CHEMISTRY

[Including Sugar Technology]

Professor SANTOS (Head); Associate Professor De Leon; Instructors BANZON, BERMEJO, COLLADO, CRUZ, GALVEZ¹, SOLIVEN and VILLANUEVA; Assistants GARCIA, LUMANG, MANAHAN, MARFORI, PIDLAOAN, and YNALVEZ.

FOR UNDERGRADUATES

Agricultural Chemistry 1a; *GENERAL CHEMISTRY*.—A study of the fundamental principles of general chemistry and the non-metallic elements. Three lectures and six hours of laboratory work weekly. Required in all curricula.

First semester, credit 5 units.

Agricultural Chemistry 1b; *GENERAL CHEMISTRY*.—A study of the metallic elements and their separation. Three lectures and six hours of laboratory work weekly. Required in all curricula.

Prerequisite: Agricultural Chemistry 1a.

Second semester, credit 5 units.

Agricultural Chemistry 2; *ANALYTICAL CHEMISTRY*.—Theories and practice of elementary analytical chemistry. Manual: ADRIANO—*Elementary Quantitative Analysis*. Three lectures and six hours of laboratory work weekly. Required in all curricula.

Prerequisite: Agricultural Chemistry 1.

First semester, credit 5 units.

Agricultural Chemistry 3a; *ORGANIC CHEMISTRY*.—Preparation, properties, and classification of typical organic compounds. Special emphasis upon agricultural application. Three lectures and six hours of laboratory work weekly. Required in the Sugar Technology Curriculum.

Prerequisite: Agricultural Chemistry 1.

First semester, credit 5 units.

Agricultural Chemistry 3b; *INTERMEDIATE ORGANIC CHEMISTRY*.—Preparation, properties and classification of more complex organic compounds. Three lectures and six hours of laboratory work weekly. Required in the Sugar Technology Curriculum.

Prerequisite: Agricultural Chemistry 3a.

Second semester, credit 5 units.

Agricultural Chemistry 4; *PHYSICAL CHEMISTRY*.—Elementary study of the fundamental laws and properties of liquids and gases. Two lectures and discussion and three hours of laboratory work weekly. Text:

¹ On special detail in Germany.

GETMAN—*Outline of Theoretical Chemistry*. Laboratory Manual: FINDLAY—*Practical Physical Chemistry*. Required in the Sugar Technology Curriculum.

Prerequisites: Agricultural Chemistry 2 and 3a.

Throughout the year, credit 6 units.

Agricultural Chemistry 5; *INDUSTRIAL CHEMISTRY*.—A study of the important chemical industries. Special attention is given to Philippine industries such as oils, starches, sugars, fertilizers, alcohols, soaps, leathers, etc. Trips to industrial plants in Manila and vicinity are required. Three lectures a week. Required in the Sugar Technology Curriculum.

Prerequisites: Agricultural Chemistry 2 and 3a.

First semester, credit 3 units.

Agricultural Chemistry 6; *CHEMISTRY OF THE SUGARS*.—A study of the occurrence, structure, properties, and methods of analysis of the more important sugars found in plants and animals. Emphasis is laid on those sugars that have particular application to the industries. Text: BROWNE—*Handbook of Sugar Analysis*. The course requires three lectures and six hours of laboratory work weekly. Elective.

Prerequisite: Agricultural Chemistry 4.

First semester, credit 5 units.

Agricultural Chemistry 9; *ELEMENTS OF GLASS BLOWING*.—A course especially designed for the more advanced students to give actual experience in the construction, modification, and repair of simple glass apparatus. The course consists of lectures, demonstrations and exercises in glass blowing. Students are required to hand in detailed report and submit samples of their exercises. One meeting of 3 hours of laboratory weekly. Open only to senior and graduate students. Elective.

First or second semester, credit 1 unit.

Agricultural Chemistry 99; *SPECIAL PROBLEMS IN CHEMISTRY*.—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Agricultural Chemistry 100; *UNDERGRADUATE THESIS IN CHEMISTRY*.—Credit for undergraduate thesis is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Agricultural Chemistry 120; *AGRICULTURAL ANALYSIS* (Soils, Fertilizers and Insecticides). One lecture and six hours of laboratory work weekly. Required in the Sugar Technology Curriculum.

Prerequisite: Agricultural Chemistry 2.

Second semester, credit 3 units.

Agricultural Chemistry 121; *AGRICULTURAL ANALYSIS* (Foods and Feeds.) The course requires one lecture and six hours of laboratory work weekly. Elective.

Prerequisites: Agricultural Chemistry 2 and 3a.

Second semester, credit 3 units.

Agricultural Chemistry 130; *BIOCHEMISTRY*.—Chemical composition of living matter and fundamentals of nutrition. One lecture and six hours of laboratory work weekly. Elective.

Prerequisite: Agricultural Chemistry 3a.

Second semester, credit 3 units.

Agricultural Chemistry 140; *COLLOID CHEMISTRY*.—Devoted to surface tension, contact catalysis, Donnan equilibrium, the general principles relating to disperse systems, and applications. Laboratory Manual: HOLMES—*Laboratory Manual of Colloid Chemistry*.—Three lectures and fifteen hours of laboratory work weekly for six weeks. Elective.

Prerequisite: Agricultural Chemistry 4.

Summer, credit 3 units.

Agricultural Chemistry 199; *SEMINAR IN CHEMISTRY*.—The seminar consists of review and discussion of current literature in chemistry. Reports are required. One meeting each week. Open to senior, thesis, and graduate students.

Throughout the year credit, 2 units.

FOR GRADUATES

Agricultural Chemistry 300; *MASTER'S THESIS IN CHEMISTRY*.—Credit for Master's thesis is recorded under the number 300.

By arrangement, credit 10 units.

SUGAR TECHNOLOGY

Professor KING; Instructor EBRO; Assistant GUANZON.¹

FOR UNDERGRADUATES

Sugar Technology 1; *CANE FIELD PRACTICE*.—This course is designed to give the students actual experience in designing drainage and irrigation canals for sugar cane fields and in laying out experimental fields for variety and fertilizer tests. The course, which is open only to sugar technology students, is given partly in the summer between the second and third years, and partly at the beginning of the second semester of the third year while the students are waiting for the college milling season to open in January. The course covers a total of 216 hours of field work.

Summer and second semester, credit 3 units.

Sugar Technology 2; *TECHNICAL SUGAR ANALYSIS*.—Principles and laboratory exercises in technical and commercial analysis of sugar and sugar house products. The lectures include discussion of precision of measurements, principles and limitations of each piece of apparatus and

¹ On leave in the United States as a University Fellow.

each reagent; while the laboratory is intended to familiarize the students with the practical applications in the laboratory of the principles studied with special reference to chemical control in the cane sugar factory. Texts: DEERR: *Cane Sugar*, SPENCER-MEADE: *Cane Sugar Handbook*; BROWNE: *Handbook of Sugar Analysis*. Three lectures and six hours of laboratory work weekly. Required in the Junior year of the Sugar Technology Curriculum.

Prerequisites: Agricultural Chemistry 4 and Physics 2.

First semester, credit 5 units.

Sugar Technology 3; *THERMODYNAMICS*.—Elementary consideration of behavior of gases. Theory of vaporization, steam engine, air compressor, refrigerating machinery, evaporating, condensing and cooling apparatus. Two lectures and three hours of laboratory work weekly. Required in the Junior year of the Sugar Technology Curriculum.

Prerequisites: Agricultural Engineering 1 and 2; Agricultural Chemistry 4; Physics 2; and Mathematics 102.

First semester, credit 3 units.

Sugar Technology 4; *MILL PRACTICE "A."*—This course is intended to train the students for factory foremanship and position of bench chemist. Each student is required to work as labor hand, for a definite period, in every department of the factory. Sixty-four hours of laboratory work weekly at the U.P. Sugar Mill is required. Required in the Junior year of the Sugar Technology Curriculum.

Prerequisite: Sugar Technology 2.

Second semester (one college milling season), credit 16 units.

Sugar Technology 5; *FACTORY MANAGEMENT*.—A detailed study of the operation of machinery and equipment of a factory producing raw sugar from cane. The different phases of manufacture are discussed with special emphasis on factors affecting efficiency. The work consists in preparing reports and sugar accounting. Texts: DEERR: *Cane Sugar*; SPENCER-MEADE: *Cane Sugar Handbook*. The course requires three lectures and six hours of report making weekly. Required in the senior year of the Sugar Technology Curriculum.

Prerequisite: Sugar Technology 4.

First semester, credit 5 units.

Sugar Technology 6; *SUGAR MACHINERY DESIGN*.—Calculation and preparation of a layout of machinery for a complete sugar mill plant. The work is carried on by means of data prepared by the department and by reference to various catalogues and authorities on the subject. Three lectures and six hours of designing weekly. Required in the senior year of the Sugar Technology Curriculum.

Prerequisites: Sugar Technology 3 and 4.

First semester, credit 5 units.

Sugar Technology 7; *MILL PRACTICE "B."*—This course is a continuation of Sugar Technology 4, but includes field practice in a cane plantation. Whenever possible, it will be required that the work be taken in one

of the Philippine Sugar Centrals. Full shift time. Required in the senior year of the Sugar Technology Curriculum.

Prerequisites: Sugar Technology 4, 5, and 6.

Second semester (one whole milling season), credit 20 units.

Sugar Technology 100; *SUGAR TECHNOLOGY THESIS*.—Investigations of problems, either in chemistry of the sugars, in agronomy of sugar cane, or manufacturing problems. Required of students taking Sugar Technology Course. Twelve hours weekly.

Three semesters, credit 10 units.

Sugar Technology 199; *SEMINAR*.—A one-hour weekly discussion of topics dealing either with chemistry or production of cane sugar. The course is designed, principally, to introduce the students to a systematic use of references and to familiarize them with the current literature on the subject. Each student is required to make at least one complete report on some topic, assigned by the member of the faculty in charge, each semester. Required of both junior and senior students.

Two semesters, credit 2 units

DEPARTMENT OF AGRICULTURAL EDUCATION

Assistant Professor FRASER; Instructors SACAY (In Charge of the Department), AGLIBUT, BUENAVENTURA, COSTA, MONTELLANO (Teacher on special detail), ROCAFORT¹ and WILLIAMSON; Assistant Instructor AGUDO, BARROS, CASTILLO, REANTASO and VARONA.

FOR UNDERGRADUATES

Agricultural Education 1; *INTRODUCTION TO EDUCATION*.—A study of the meaning, nature, and function of education; fundamental principles, aims, and values in education; physical, sociological, economic and mental aspects of educational process. Three recitations weekly.

First semester, credit 3 units.

Agricultural Education 2 (Old 3); *EDUCATIONAL PSYCHOLOGY*.—A study of the nature and bases of human behavior and the learning process; neurological bases of behavior; instinctive tendencies to behavior; laws of learning and habit formation and their application to teaching and learning of school and other functions; factors affecting efficiency of learning; transfer of training; nature and significance of individual differences. Three recitations weekly.

First semester, credit 3 units.

Agricultural Education 3 (Old 4); *RURAL-EDUCATIONAL SOCIOLOGY*.—A study of the relation of public education to society; the school as an educational institution and its relation to other institutions that educate; adjusting educational programs to present needs; a study of rural society, rural life, rural conditions, and rural needs; forces and factors

¹ On leave

in rural social progress; problems of rural progress and relation of education to them. Three recitations weekly.

Prerequisite: Agricultural Education 1.

Second semester, credit 3 units.

Agricultural Education 4 (Old 2); *AGRICULTURAL SCHOOL ADMINISTRATION*.—An introductory course in administration and supervision designed to help beginning teachers of vocational agriculture. Types of agricultural schools, their objectives and curricula. Administrative and supervisory duties and responsibilities of the teacher. Problems of organization, supervision and management of students' and school enterprises. Improvement of instruction and teachers in service. Extra curricular activities. Records, correspondence and reports. Three recitations weekly.

Prerequisite: Agricultural Education 1.

Second semester, credit 3 units.

Agricultural Education 99; *SPECIAL PROBLEMS IN AGRICULTURAL EDUCATION*.—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

FOR UNDERGRADUATES AND GRADUATES

Agricultural Education 101 (Old 1 and 101); *METHODS OF TEACHING VOCATIONAL AGRICULTURE*.—Selection and organization of teaching content. Determining types of farming, arranging enterprises, selecting farm jobs, determining time allotment, and organizing the course of study. Making yearly teaching plans, job outlines of enterprises, horizontal and monthly layout of teaching jobs, analysis of jobs, teaching layout of jobs, operating sheets for exercises, and students' study notebooks. Devices for putting over the instruction in classroom, laboratory, and field work. Devices for measuring results of instruction. Projects and project work in vocational agriculture. Three recitations weekly. Open only to candidates for the Certificate in Agricultural Education.

Prerequisites: Agricultural Education 1 and 2.

Throughout the year, credit 6 units.

Agricultural Education 111 (Old 102); *OBSERVATION AND PRACTICE TEACHING*.—Observation of teaching in horticulture, animal husbandry and farm crops classes in the U. P. Rural High School. Conferences and discussions. Professional reading and reports. Preparation and submission of teaching plans preliminary to practice teaching. Practice in the conduct and management of field classes, and in managing and supervising project work in vocational agriculture. By arrangement. Open only to students who have taken or are taking Agricultural Education 101.

Throughout the year, credit 6 units.

Agricultural Education 121 (Old 11); *VOCATIONAL EDUCATION AND GUIDANCE*.—Meaning of vocational education; aims and functions; need of vocational education in a democracy; relation of vocational education to general education; agencies for vocational education. Vocational

choice and preparation as related to intelligence, interests, aptitudes, and specific abilities of the individual. Vocational education movement in other countries and in the Philippines; present status, needs, and problems of vocational education in the Philippines. Three lectures weekly.

Prerequisite: Agricultural Education 1, or by permission.

Second semester, credit 3 units.

Agricultural Education 199; *SEMINAR IN AGRICULTURAL EDUCATION*.—Review and discussion of current literature in agricultural education. Reports required. One meeting a week. Open only to senior and graduate students.

Throughout the year, credit 2 units.

DEPARTMENT OF AGRICULTURAL ENGINEERING

[Including Mathematics and Physics]

Associate Professor TEODORO (Acting Head); Assistant Professors CATAMBAY and ROA; Instructors ALAS, BAUTISTA, CRUZ and ONGSANSOY; Assistants BONDOC and MAMISAO.

FOR UNDERGRADUATES

Farm Experience B; *BLACKSMITHING*.—A brief course in the handling of the forge and elements of iron working. Nine hours of shop work weekly for six weeks. No formal credit is given, but satisfactory completion of the course is required in the Bachelor of Science in Agriculture curriculum.

Summer, Informal credit.

Farm Experience C; *CARPENTRY*.—A brief course of exercises in the handling of tools and the elements of woodworking. Nine hours of shop work weekly for six weeks. No formal credit is given, but satisfactory completion of the course is required in the Bachelor of Science in Agriculture curriculum.

Summer, Informal credit.

Farm Experience H; *HOUSEHOLD ENGINEERING*.—House designing and the care and repair of household equipment. Nine hours of shop work weekly for six weeks. No formal credit is given, but satisfactory completion of the course is required. Offered only for women students in lieu of Farm Experience B.

Summer, Informal credit.

Agricultural Engineering 1; *FARM MECHANICS AND GAS ENGINES*.—Mechanics and materials. Construction, adjustment, operation, and testing of single cylinder gas engines. Measurement and transmission of power. Study of the mechanics of pumps and of plows. Two lectures and three hours of laboratory work weekly. Required in all curricula.

Prerequisite: Physics 1.

First semester, credit 3 units.

¹ On leave in the United States as a University Fellow:

Agricultural Engineering 2; *FARM MOTORS AND FARM MACHINERY*.—Construction, adjustments, operation and testing of tractors and of farm machinery. Measurement and transmission of power. Two lectures and three hours of laboratory work weekly. Required in all curricula.

Prerequisite: Agricultural Engineering 1.

Second semester, credit 3 units.

Agricultural Engineering 3; *PRINCIPLES OF IRRIGATION AND DRAINAGE*.—Water supply, rights, duty, conveyance, pumping, design, location, and construction of drainage ditches. Measurement and calculation of land areas, leveling, contouring, and mapping. Two lectures and three hours of laboratory work weekly. Required in all curricula.

Prerequisite: Physics 1.

Second semester, credit 3 units.

Agricultural Engineering 4; *MECHANICAL DRAWING*.—Selection, care and use of instruments: free hand lettering; orthographic projection; isometric drawing and other pictorial representations; free hand sketching of machine parts and assemblies; making of detailed working drawings; and blue printing. Text: *FRENCH—Mechanical Drawing*. Seventeen hours of mechanical drawing weekly for six weeks: Required in the Sugar Technology Curriculum and of students majoring in Agricultural Engineering.

Summer, credit 2 units.

Agricultural Engineering 5; *PLANE SURVEYING*.—The study of the use, adjustment, and care of instruments; surveying methods; computations; and plotting. Two lectures and three hours of laboratory work weekly. Summer camping is required. Elective.

Prerequisite: Agricultural Engineering 3.

First semester, credit 3 units.

Agricultural Engineering 6; *CONCRETE*.—Concrete and concrete constructions are investigated. The materials used, the proper proportions, the correct manner of mixing, reinforcing, and placing receive careful attention. No text, but references are freely assigned. Six hours of laboratory work weekly. Elective.

First semester, credit 2 units.

Agricultural Engineering 7; *FARM BUILDINGS*.—Designing of farm buildings and lay out of farms. Six hours of mechanical drawings weekly. Elective.

Prerequisite: Agricultural Engineering 4.

Second semester, credit 2 units.

Agricultural Engineering 8; *FARM SANITATION*.—Sewage and sewerage; location, construction, and design of sewerage disposal plants. Two lectures and three hours of laboratory work weekly. Elective.

First or Second semester, credit 3 units.

Agricultural Engineering 99; *SPECIAL PROBLEMS IN AGRICULTURAL ENGINEERING*.—Research in farm machinery, farm power, farm sanitation, drainage, and irrigation. See page 19 for regulations covering special problem courses.

Prerequisites: Agricultural Engineering 1, 2, and 3.

By arrangement, credit 1 to 6 units.

Agricultural Engineering 100; *UNDERGRADUATE THESIS IN AGRICULTURAL ENGINEERING*.—Investigational or original research in some agricultural engineering subjects. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Agricultural Engineering 101; *IRRIGATION LAWS*.—A study of the history, growth, and development of irrigation statutes, with special reference to Philippine water laws. No text, but references are freely assigned. Two lectures a week. Elective.

Prerequisite: Agricultural Engineering 3.

First or Second semester, credit 2 units.

Agricultural Engineering 102; *ADVANCED IRRIGATION AND DRAINAGE*.—Continuation of Agricultural Engineering 3. Drainage surveying. Pumps and pumping plants. Irrigation structures. Distributary systems. Two lectures and six hours of laboratory work weekly. Elective.

Prerequisite: Agricultural Engineering 3.

First or Second semester, credits 4 units.

Agricultural Engineering 103; *ADVANCED FARM MOTORS AND FARM MACHINERY*.—Construction, operation, adjustment, and testing of farm tractors. Continuation of Agricultural Engineering 2. Two lectures and six hours of laboratory work weekly. Elective.

Prerequisite: Agricultural Engineering 2.

First or Second semester, credit 4 units.

Agricultural Engineering 199; *SEMINAR IN AGRICULTURAL ENGINEERING*.—The seminar consists of review and discussion of current literature in Agricultural Engineering with presentation of papers. One meeting each week. Open only to senior, thesis, and graduate students.

Throughout the year, credit 2 units.

MATHEMATICS

FOR UNDERGRADUATES

Mathematics 1; *PLANE TRIGONOMETRY*.—Functions of angles, trigonometric identities and equations, logarithms and the solution of triangles. Text: *BARKER—Plane Trigonometry*. Three recitations weekly. Required in all curricula.

First semester, credit 3 units.

Mathematics 2; *COLLEGE ALGEBRA*.—Review of High School algebra through quadratics; progressions; mathematical induction; permutations, combinations, and probability; the binomial theorem; complex numbers; and the theory of equations. Text: HAWKES—*Advanced Algebra*. Three recitations weekly. Elective.

First semester, credit 3 units.

Mathematics 3; *ANALYTIC GEOMETRY*.—Loci, conic sections, polar coördinates, the trigonometric curves, the general equation of the second degree, higher plane curves, and the elements of solid analytic geometry. Text: ROBERTS AND COLPITS—*Analytic Geometry*. Three recitations weekly. Elective.

Second semester, credit 3 units.

Mathematics 4; *SOLID GEOMETRY*.—The usual course in solid geometry supplemented with the elements of descriptive geometry in the last part of the second semester. Text: HAWKES-LUBY-TOUT N—*Solid Geometry*. Two recitations weekly. This course may be taken in conjunction with Mathematics 2 and 3. Elective.

Throughout the year, credit 4 units.

Mathematics 5; *ELEMENTARY MATHEMATICAL ANALYSIS*.—College algebra and the elements of plane analytic geometry. Fifteen hours of recitation weekly for six weeks. Required in the Sugar Technology Curriculum.

Prerequisite: Mathematics 1.

Summer, credit 5 units.

FOR UNDERGRADUATES AND GRADUATES

Mathematics 101; *DIFFERENTIAL CALCULUS*.—Differentiation, maxima and minima, and applications. Text: WOODS and BAILEY—*Elementary Calculus*. (The first ten chapters). Three recitations weekly. Required in the Sugar Technology Curriculum.

Prerequisites: Either Mathematics 2 or 3, or Mathematics 5.

Second semester, credit 3 units.

Mathematics 102; *INTEGRAL CALCULUS*.—Integration, definite integrals, areas and volumes, double integration, applications. Text: WOODS and BAILEY—*Elementary Calculus*. (Beginning Chapter XI). Three recitations weekly. Required in the Sugar Technology Curriculum.

Prerequisite: Mathematics 101.

First semester, credit 3 units.

PHYSICS

FOR UNDERGRADUATES

Physics 1; *GENERAL PHYSICS*.—The fundamentals of mechanics, heat, light, and electricity in application to physical problems of the farm.

Three lectures and six hours of laboratory work weekly. Required in all curricula.

Prerequisites: High School Physics and Mathematics 1.

Second semester, credit 5 units.

Physics 2; *ADVANCED PHYSICS*.—Continuation of Physics 1. Two lectures and three hours of laboratory work weekly. Required in the Sugar Technology Curriculum.

Prerequisite: Physics 1.

Second semester, credit 3 units.

DEPARTMENT OF AGRONOMY

Professor MENDIOLA (Head); Assistant Professors DAVID and GONZALEZ; Instructors ARAGON, BALTAZAR,¹ CALMA, CAPINPIN and DAWIS; Assistants DE GUZMAN, MERCADO, MONSALUD, NOVERO, SAN PEDRO, SERRANO and YANGO.

FOR UNDERGRADUATES

Farm Experience A; *SUMMER FARM PRACTICE*.—An intensive course given during summer for the purpose of increasing the student's experience with the things of the farm and garden at a time when they can devote themselves quite fully to this very essential phase of their training. Fifteen hours of field work weekly for six weeks. No formal credit is given, but satisfactory completion of the course is required in the Bachelor of Science in Agriculture curriculum.

Summer, informal credit.

Agronomy 1; *SEASONAL FARM PRACTICE*.—Designed to give experience and practice in a great diversity of farm operations and in the care and culture of many crops. Most of the students who come to the College have not had much experience in modern methods of farming. To supply this need and give the student some familiarity with the crops which they are to study and the tools and implements with which they are to work, this course is provided during their first year of residence and is supplemented by Farm Experience A which is given during the summer session. Six hours of field work weekly. Required in all curricula.

Throughout the year, credit 4 units.

Agronomy 2; *PRINCIPLES OF CROP PRODUCTION*.—The course is an elementary study designed to give the students an introduction to the study of agriculture, covering the relation of climate to crops, choice, and adaptation of crops, tillage, soil treatment, manures, irrigation, drainage, judging, grading, and testing of seeds, value of good seeds and varieties, germination, plant development, plant propagation, plant improvement, repressive agencies, harvesting, storage, marketing, cost of production, crop reports, and estimates. Three lectures and six hours of laboratory and field work weekly. Required in all curricula.

Prerequisite: Soils 1.

First semester, credit 5 units.

¹On special detail in the U. S.

Agronomy 3; SURVEY OF PHILIPPINE CROPS.—A brief survey of the more important Philippine crops as an introduction to technical agronomy. The economic importance of each crop is treated; the relation to domestic consumption and export, and cultural requirement. Five lectures weekly. Required in the Bachelor of Science in Agriculture curriculum.

Prerequisite: Agronomy 2.

Second semester, credit 5 units.

Agronomy 7; PRINCIPLES OF BREEDING.—A study of the laws underlying the breeding or improvement of plants and animals and the relation of these laws to the science of eugenics. The course aims to give the students a knowledge of the facts and phenomena of variation and heredity and their relation to environment. Organic evolution, inheritance of acquired characters, pure lines and Mendelian heredity, mutations, natural and artificial selection are discussed. The students are trained in elementary biometry which includes statistical treatment of variation, correlation, and heredity. Three lectures and six hours of laboratory and field work weekly. Required in the Sugar Technology curriculum.

Prerequisites: Agronomy 2, Zoölogy 1, Agricultural Chemistry 1, and Plant Physiology 1.

First semester, credit 5 units.

Agronomy 8; METHODS OF BREEDING TROPICAL CROPS.—A study of the different methods and achievements in plant breeding, especially in the tropics. Special attention is paid to the amelioration by selection and hybridization of rice, corn, sugar cane, tobacco, sweet potato, and minor Philippine crops. Text: MENDIOLA—*A Manual of Plant Breeding for the Tropics*. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Agronomy 7.

Second semester, credit 5 units.

Agronomy 9; FARM MANAGEMENT.—The principles underlying farm management, including studies of cost of production; farm organization; farm finance; farm labor; land utilization and farm life studies in the Philippines; uses of machinery based on Philippine conditions; and the marketing of farm products. Text: G. F. WARREN—*Farm Management*. Lectures and classroom work are supplemented with field studies on the College farm and with inspection trips. Three lectures and six hours of laboratory and field work weekly. Elective.

Prerequisites: Agronomy 2 and Rural Economics 1. Concurrent: Agricultural Engineering 1.

First semester, credit 5 units.

Agronomy 11; COFFEE, CACAO, AND SPICES.—A study of coffee, cacao, and spices, covering the following subjects in detail: history, geographical distribution, climatic requirements, botany and nomenclature,

varieties, selection of land, nurseries, planting, shading, cultivation and manuring, pruning and sanitation, harvesting, fermentation, washing, drying, diseases and enemies, selection, uses and value of the products, production in the Philippines and elsewhere. Extensive practice in the College cultures is required of each student. Trips to coffee and cacao growing districts required. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Agronomy 2.

Second semester, credit 5 units.

Agronomy 12; *TOBACCO*.—A comprehensive account of the tobacco industry in the Philippines and its relation to that of other countries. Special attention to the culture, curing, selection, and diseases of the tobacco plant. Students are required to conduct their own field cultures. Visits to Manila cigar factories, required. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Agronomy 2.

Second semester, credit 5 units.

Agronomy 13; *CEREALS AND FIELD LEGUMES*.—A study of the more important cereal and leguminous crops of the Philippine Islands. Special emphasis is placed upon rice and corn as representatives of the cereals and upon the leguminous crops of great value for food, forage, or cover crops under tropical conditions. Lectures and laboratory work supplemented with field studies and experience in planting, care, harvesting, and milling. Field trips to rice regions near by are required. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Agronomy 2.

Throughout the year, credit 10 units.

Agronomy 14; *FORAGE AND PASTURE PLANTS*.—A study of forage and pasture plants and their identification, culture, and utility. Native and introduced plants of known or of possible value for pasture or for forage studied. Field work includes a study of *zacate* and other forage crops in the Los Baños region. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Agronomy 2.

Second semester, credit 5 units.

Agronomy 15; *FIBERS*.—This course consists of two supplementary parts; namely, Fiber Production and Fiber Technology. The first part takes into consideration the operations involved in the economic production of the important fibers, laying emphasis on those that are or may be produced in the Philippines and on those that are serious competitors of Philippine fibers in the world's market. The second part includes the identification, uses, and grading of fibers. Special attention is given to abacá in both parts of the course. The classes in this course and Agronomy 16 are arranged so that the student may take both concurrently (in the same

year). A trip to abacá regions near by is required. Two lectures and four hours of field work weekly during the first semester and one lecture and two hours of field work weekly during the second semester. Elective.

Prerequisites: Plant Physiology 1 and Agronomy 2.

Throughout the year, credit 5 units.

Agronomy 16; *OIL PLANTS*.—Special emphasis is given to the study of the coconut; its diseases and their treatment; all the steps in its proper cultivation, harvesting, and preparation for market, in the Philippines and elsewhere; and the uses and value of the products. Other oil plants are studied in the same way though more briefly. The course is arranged so that it may be taken concurrently with Agronomy 15. A trip to coconut regions near by is required. One lecture and two hours of field work weekly during the first semester and two lectures and four hours of field work weekly during the second semester. Elective.

Prerequisites: Plant Physiology 1 and Agronomy 2.

Throughout the year, credit 5 units.

Agronomy 17; *RUBBER*.—A study of commercial rubber production, including planting, propagation, cultivation and care of the trees, the gathering of latex, and the production of crude rubber. Two lectures and three hours of field work weekly. Elective.

Prerequisite: Agronomy 2.

First semester, credit 3 units.

Agronomy 18; *ELEMENTS OF HORTICULTURE*.—A brief survey of the field of horticulture including a discussion of some of the more important aspects of fruit raising, vegetable growing, and the culture of flowers and ornamentals. Three lectures and six hours of field work weekly. Intended for students not majoring in Horticulture. Elective.

Prerequisites: Agronomy 2 and Plant Physiology 1.

First semester, credit 3 units.

Agronomy 19; *TROPICAL POMOLOGY*.—A study of the important fruits found in the tropics and the natural and cultural requirements for their successful production. Special attention is given to fruits in commercial culture in the Philippines and to those which give promise of large commercial importance, including the banana, pineapple, mango, citrus fruits, avocado, lansones, papaya, and chico. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Agronomy 2.

First semester, credit 5 units.

Agronomy 21; *FLORICULTURE AND LANDSCAPE GARDENING*.—This course is designed to teach the principles and practices of the culture of flowers and of other ornamental plants in houses, in nurseries and gardens and in the planting of larger grounds. The principles of landscape gardening are presented to indicate the proper arrangement of ornamental plants for the best effect from the standpoints of convenience

and of ornamentation. Trips to commercial nurseries and to parks and gardens required. Three lectures and six hours of field work weekly. Elective.

First or second semester, credit 5 units.

Agronomy 22; SUGAR CANE.—The culture of sugar cane as practiced in different countries, with special reference to cane production in the Philippines. Correlated with the activities in sugar-cane breeding. Visits to sugar plantations and centrals and panocha factories in the vicinity of the College required. Three lectures and six hours of field work weekly. Required in the Sugar Technology curriculum.

Prerequisite: Agronomy 2.

Second semester, credit 5 units.

Agronomy 23; ADVANCED SUGAR-CANE BREEDING.—A thorough study of sugar-cane varieties in the Philippines and of the more important ones in other countries, especially from the standpoint of their values and adaptability to hybridization work. The methods of sugar-cane improvement followed in different countries are discussed. The course includes a study of methods of describing, classifying and identifying sugar-cane varieties. Two lectures and three hours of field work weekly. Required in the Sugar Technology curriculum.

Prerequisite: Agronomy 7. Concurrent: Agronomy 22.

Second semester, credit 3 units.

Agronomy 24; PROPAGATION OF TROPICAL FRUIT PLANTS.—A course designed to give the students an extensive training in the various methods of propagation of important and promising tropical fruit plants. Three lectures and six hour of field work weekly. Elective.

Prerequisite: Agronomy 19.

Second semester, credit 5 units.

Agronomy 25; TROPICAL OLERICULTURE.—A study of the principles and practice of vegetable production under tropical conditions with reference to tropical vegetables and also to those of the temperate zones which may be successfully cultivated in the Philippines. Emphasis is laid upon the cultural side and students are required to carry the crops through from seed to maturity. Inspection trips to vegetable gardens in Manila and vicinity are required. Three lectures and six hours of field work weekly. Elective.

Second semester, credit 5 units.

Agronomy 99; SPECIAL PROBLEMS IN AGRONOMY.—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Agronomy 100; *UNDERGRADUATE THESIS IN AGRONOMY*.—Credit for undergraduate thesis is recorded under the number 100. See page 19 for regulations covering undergraduate thesis.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Agronomy 105; *EXPERIMENTAL POMOLOGY*.—The course includes the study of methods in experimental work and discussion of approved practices in pomology and the principles involved. Recent reports on pomology experiments are reviewed. The course requires three lectures and six hours of laboratory work weekly. Elective.

Prerequisites: Agronomy 7 and 19.

By arrangement, credit 5 units.

Agronomy 199; *SEMINAR IN AGRONOMY*.—A review and discussion of current literature in agronomy with presentation of papers. Open to all members of the agronomy faculty. Required of certain advanced students, senior, thesis and graduate students majoring in the Department of Agronomy. One meeting a week.

Throughout the year, credit 2 units.

FOR GRADUATES

Agronomy 201; *ADVANCED GENETICS*.—The course is an advanced treatment of the field of Agronomy 7 (Principles of Breeding). The following main topics are covered: Methods of genetic analysis and testing, modified Mendelian ratios linkage, inheritance of sex, mutations, sterility, eugenics. Recent reports on genetic investigations are studied. The course requires three lectures and six hours of laboratory work weekly.

Prerequisite: Agronomy 7.

First or second semester, credit 5 units.

Agronomy 202; *ADVANCED METHODS OF BREEDING TROPICAL CROPS*.—The course is an advanced treatment of Agronomy 8 (Methods of Breeding Tropical Crops). Recent reports on plant breeding investigations are studied. New and improved technique in plant improvement is studied, especially its adaptation to local conditions. The course requires three lectures and six hours of field work weekly.

Prerequisite: Agronomy 8.

First or second semester, credit 5 units.

Agronomy 300; *MASTER'S THESIS IN AGRONOMY*.—Credit for Master's theses is recorded under the number 300.

By arrangement, credit 10 units.

DEPARTMENT OF ANIMAL HUSBANDRY

Professor GONZALEZ (Head); Associate Professor VILLEGAS (Assistant Head); Assistant Professors FRONDA, MANRESA, and MONDONEDO; Instructors SARAO and TALEON; Junior Animal Husbandman ESGUERRA; Assistant BASIO.

FOR UNDERGRADUATES

Animal Husbandry 1; *GENERAL PRINCIPLES OF ANIMAL HUSBANDRY*.—A study of the fundamental principles of animal husbandry in its different phases. Three lectures a week. Required in all curricula. Second semester, credit 3 units.

Animal Husbandry 2; *LIVE STOCK JUDGING AND MANAGEMENT*.—Selection, care, and management of farm animals. Six hours of field work weekly. Required in all curricula.

Throughout the year, credit 4 units.

Animal Husbandry 3; *PRINCIPLES OF ANIMAL NUTRITION*.—The preparation of feeds, the computation of rations, and methods of feeding for economical production. Special emphasis is given to the consideration of the nutritive value of Philippine feeds. Text: HENRY and MORRISON—*Feeds and Feeding* (Abridged). Three lectures or recitations weekly. Elective.

Prerequisites: Animal Husbandry 1 and 2.

First semester, credit 3 units.

Animal Husbandry 4; *ANIMAL BREEDING*.—The reproductive function, Mendelism, principles of constructive breeding and their application to the improvement of live stock. Three lectures weekly. Elective.

Prerequisites: Animal Husbandry 1 and 2.

Second semester, credit 3 units.

Animal Husbandry 5; *PEDIGREES*.—History of the principal breeds of farm animals, methods of registration, and study of pedigrees. Three recitations weekly. Elective.

Prerequisites: Animal Husbandry 1 and 2.

Second semester or Summer, credit 3 units.

Animal Husbandry 99; *SPECIAL PROBLEMS IN ANIMAL HUSBANDRY*.—Credit for report on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Animal Husbandry 100; *UNDERGRADUATE THESIS IN ANIMAL HUSBANDRY*.—Credit for undergraduate theses is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Animal Husbandry 101; *POULTRY HUSBANDRY*.—The principal factors concerned in general poultry management; judging, feeding, incubation, brooding, housing, and the selection and laying out of a poultry farm; marketing eggs and poultry. Three lectures and six hours of field work weekly. Elective.

Prerequisite or concurrency: Animal Husbandry 3.

First semester, credit 5 units.

Animal Husbandry 102; *SWINE HUSBANDRY*.—The study of the different breeds of swine, methods of feeding, breeding, housing, prevention and control of diseases, care and management under varying conditions. Three lectures and six hours of field work weekly. Elective.

Prerequisite or concurrency: Animal Husbandry 3.

First semester, credit 5 units.

Animal Husbandry 103; *CATTLE HUSBANDRY*.—The study of beef cattle and carabaos. The various types as they affect the Philippine market and needs. The nutritive value and relative prices of the different cuts of beef. Emphasis is placed on the management of cattle on the open range. Three lectures and seventeen hours of field work weekly for six weeks. Elective.

Prerequisite: Animal Husbandry 3.

Summer, credit 3 units.

Animal Husbandry 104; *DAIRY HUSBANDRY*.—Breeding, feeding, and care of dairy cattle and carabaos. The physiological processes involved in milk secretion. Laboratory work includes the preparation of cheese and butter and the handling of market milk. Three lectures and six hours of field work weekly. Elective.

Prerequisite or concurrency: Animal Husbandry 3.

Second semester, credit 5 units.

Animal Husbandry 105; *HORSE HUSBANDRY*.—Breeding, feeding, handling of both breeding and work horses, and general horsemanship. Study of the market types and the influence of introduced blood in the improvement of the native stock, stallion laws regulating breeding operations in foreign countries. Two lectures and three hours of field work weekly. Elective.

Prerequisite or concurrency: Animal Husbandry 3.

Second semester, credit 3 units.

Animal Husbandry 199; *SEMINAR IN ANIMAL HUSBANDRY*.—Review and discussion of current literature in animal husbandry. Reports required. One meeting a week. Open only to senior, thesis, and graduate students.

Throughout the year, credit 2 units.

FOR GRADUATES

Animal Husbandry 300; *MASTER'S THESIS IN ANIMAL HUSBANDRY*.—Credit for master's theses is recorded under the number 300.

By arrangement, credit 10 units.

DEPARTMENT OF ENGLISH

[Including Modern Languages]

Professor YULE (Head); Assistant Professor COLE; Instructors TURNER and BUENAVENTURA (Spanish).

ENGLISH

FOR UNDERGRADUATES

English 1a; *ENGLISH COMPOSITION*.—Oral discourse, particularly practice in explanations and discussions, is emphasized. It is the aim to give training in such written and spoken discourse as will be of practical value to agriculturists in the Philippine Islands. Text TANNER—*Correct English*. Five recitations weekly and three special themes during the course. Required in the General Curriculum.

First semester, credit 5 units.

English 1b. *ENGLISH COMPOSITION*.—A continuation of English 1a. Oral discourse more formal in character than in English 1a. In the special themes, in addition to correct expression the object will be the teaching of presenting in proper form papers on technical subjects. Texts: TANNER—*Correct English* and TRELEASE and YULE—*Preparation of Scientific and Technical Papers*. Five recitations weekly and three special themes during the course. Required in the General Curriculum.

Prerequisite: English 1a.

Second semester, credit 5 units.

English 2; *ENGLISH COMPOSITION*.—This course is English 1a and 1b condensed. It is arranged especially for students registered for Sugar Technology Course. Texts: TANNER—*Correct English* and TRELEASE and YULE—*Preparation of Scientific and Technical Papers*. Five recitations weekly and three special themes during the course. Required in the Sugar Technology Curriculum.

First semester, credit 5 units.

English 3a; *ADVANCED ENGLISH COMPOSITION*.—The oral work in this course is training (1) in giving talks and addresses on technical subjects connected with agriculture; and (2) in presenting technical subjects in a popular manner, that is, in language that can be understood by those who have not studied the sciences related to agriculture. The written work includes writing of short popular articles on agricultural subjects, making of abstracts of articles, theses, bulletins, and circulars, writing reviews of scientific publications, and making digests on scientific agricultural subjects. Five recitations weekly. Elective.

Prerequisite: English 1 or 2.

First semester, credit 5 units.

English 3b; *ADVANCED ENGLISH COMPOSITION*.—A continuation of English 3a with emphasis on argumentation. Credit will be given, if desired by the student, for English 3a (first semester) without requiring English 3b (second semester); but 3a will be prerequisite of 3b. Text: BAKER and HUNTINGTON—*Principles of Argumentation*. Five recitations weekly. Elective.

Prerequisite: English 3a.

Second semester, credit 5 units.

English 4; **LETTER AND REPORT WRITING**.—The written work in this course is training in letter writing, especially business and official letters, and the writing of reports both formal and informal. In oral work special attention is given to idioms, common errors in speech, enunciation, and pronunciation. Five recitations weekly. Elective.

First or second semester, credit 5 units.

English 5; **GENERAL LITERATURE**.—A brief study, by countries, of literature that has had influence in molding the ideals of man; that has contributed to human culture. Frequent papers on topics pertinent to the work required. Text: RICHARDSON and OWEN.—*Literature of the Word*. Five recitations weekly. Elective.

Prerequisite: English 1 or 2.

Throughout the year, credit 10 units.

MODERN LANGUAGES

SPANISH

FOR UNDERGRADUATES

Spanish 1; **ELEMENTARY SPANISH**.—Spanish grammar and composition, supplemented by reading and conversation. Texts: F. T. D.—*Gramática Castellana* (tercer grado) *Según los Principios de la Academia*; LOISEAUX—*Elementary Spanish Reader*; and MORLEY—*Spanish Humor in Story and Essay*; supplemented with VALDEZ—*Capitán Ribot*; ALARCON—*El Capitán Veneno*, and selected newspapers and magazines. Three recitations weekly. Elective.

Throughout the year, credit 6 units.

Spanish 2; **INTERMEDIATE SPANISH**.—Introduction to Spanish literature with review exercises in grammar and translation. Texts: HALL—*All Spanish Method*; RIZAL—*Noli Me Tangere* and *El Filibusterismo*; selections from CERVANTES—*Novelas Ejemplares*; BENAVENTE—*El Palacio Triste*; and CALDERON—*La Vida es Sueño*, supplemented with GALDOS—*Doña Perfecta*; ALARCON—*El Capitán Veneno*; MORALES—*El Si de las Niñas*; VALERA—*Pepita Jiménez*; ECHEGARAY—*El Gran Galeoto*; and ZORRILLA—*Don Juan Tenorio*. Three recitations weekly. Elective.

Prerequisite: Spanish 1.

Throughout the year, credit 6 units.

DEPARTMENT OF ENTOMOLOGY

[Including Zoölogy]

Professor UICHANCO (Head); Assistant Professor VILLADOLID; Instructor CENDAÑA;¹ Assistants CAPCO, CORONEL, and MANE.

¹On leave in the United States as a University Fellow.

ZOÖLOGY

FOR UNDERGRADUATES

Zoölogy 1; *INTRODUCTORY ECONOMIC ZOOLOGY.*—An introduction to animal biology intended to give the students a general view of the fundamental principles of zoölogy and to prepare them for more advanced work in related sciences. It is based on a study of the various biological principles, as related to zoölogy, life history, morphological characters, and relationships of representatives of the more important animal phyla, and on collection and classification. Text: HEGNER—*College Zoölogy*. Revised edition. Three lectures and six hours of laboratory work weekly. Required in all curricula.

First semester, credit 5 units.

Zoölogy 2; *VERTEBRATE ZOÖLOGY.*—A general survey, consisting of field trips, ecological observations, collection and classification of representatives of the different vertebrate classes, special attention being given to species of economic importance; a consideration of the prevertebrates; taxonomic position of the principal domestic animals; comparative anatomy of selected vertebrate types. Text: WALTER—*Biology of the Vertebrates*. Three lectures and six hours of field work weekly. Elective.

Prerequisite: Zoölogy 1.

Second semester, credit 5 units.

Zoölogy 3; *INTRODUCTORY ECONOMIC ICHTHYOLOGY.*—An introduction to the study of fishes with special reference to economic fisheries. The course is based on a study of the various methods relative to problems of fishery conservation and protection. Local methods of preserving fishery products will also be considered. Field trips are required. Elective.

Prerequisite: Zoölogy 1.

Summer (By arrangement), credit 5 units.

ENTOMOLOGY

FOR UNDERGRADUATES

Entomology 1; *INTRODUCTORY ECONOMIC ENTOMOLOGY.*—An elementary study in general entomology designed to bring out the economic side of the subject, considerable attention being paid to the recognition of the more important injurious and beneficial insects of the Philippines and to methods of pest control. Texts: FOLSOM—*Entomology with Reference to its Ecological Aspects*, third edition; COMSTOCK—*An Introduction to Entomology*. Three lectures and six hours of field work weekly. Required in all curricula.

Prerequisite: Zoölogy 1.

Second semester, credit 5 units.

Entomology 5; *INSECT COLLECTION AND ELEMENTARY ENTOMOTAXY*.—An introductory course supplementing Entomology 1 and dealing with methods of insect collection, museum technic, and classification. The work consists of field trips, preparation and labelling of specimens, card cataloguing, arrangement and care of material in insect cases, and simple exercises in taxonomic diagnosis. Elective.

Prerequisite: Entomology 1.

Summer (By arrangement), credit 3 units.

Entomology (or Zoölogy) 99; *SPECIAL PROBLEMS IN ENTOMOLOGY* (or *ZOÖLOGY*).—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Entomology (or Zoölogy) 100; *UNDERGRADUATE THESIS IN ENTOMOLOGY* (or *ZOOLOGY*).—Credit for undergraduate theses is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Entomology 103; *INSECT AFFECTING FIELD CROPS*.—An advanced course dealing with bionomics and methods of control of the principal insect pests of Philippine crops; taxonomic diagnosis of mature and immature stages of more important forms; and natural enemies. Field, breeding, and morphological work. Two lectures and nine hours of field work weekly. Elective.

Prerequisite: Entomology 1.

Second semester, credit 5 units.

Entomology 104; *INSECTS AFFECTING SUGAR CANE*.—The course is similar to Entomology 103 but limited to sugar cane and consists of a detailed consideration of the principal entomological problems relative to this crop. One lecture and six hours of field work weekly. Required in the Sugar Technology curriculum.

Prerequisite: Entomology 1.

First semester, credit 3 units.

Entomology 105, *BIOLOGY OF ENTOMOPHAGOUS INSECTS*.—An advanced course consisting of a study of selected series of parasitic insects, their developmental histories, host relations, reactions to climatic factors and other biological peculiarities. A general classification of parasitic Hymenoptera and Diptera. Biological control of noxious insects. Three lectures and six hours of laboratory work weekly.

Prerequisite: Entomology 1.

First or second semester, credit 5 units.

Entomology (or Zoölogy) 199; *SEMINAR IN ENTOMOLOGY* (or *ZOOLOGY*).—The seminar consist of review and discussion of current literature in entomology (or zoölogy). Reports are required. One meeting a week. Open only to senior, theses, and graduate students.

Throughout the year, credit 2 units.

FOR GRADUATES

Entomology (or Zoölogy) 300; *MASTER'S THESIS IN ENTOMOLOGY* (or *ZOOLOGY*).—Credit for Master's theses is recorded under the number 300.

By arrangement, credit 10 units.

DEPARTMENT OF PLANT PATHOLOGY

Associate Professor OCFEMIA (Acting Head); Instructor ROLDAN;
Assistants CELINO and MENDIOLA.

FOR UNDERGRADUATES

Plant Pathology 1; *DISEASES OF PLANTS*.—A study of the symptoms, nature and causes of plant diseases, the relation of environmental factors to the occurrence and severity of plant diseases, Koch's rules of proof and general principles of plant-disease control. The course includes a study of the more important plant diseases found in the Philippines. Three lectures and six hours of laboratory work weekly. Required in all curricula.

Concurrent: Plant Physiology 1.

Second semester, credit 5 units.

Plant Pathology 2; *METHODS OF PLANT PATHOLOGY*.—A laboratory study of common Philippine bacterial, fungus, and virus diseases of plants. The preparation of media, isolation and culture of fungi and bacteria, and technique in inoculation work are studied. The course requires two lectures and nine hours of laboratory work weekly. Elective.

Prerequisite: Plant Pathology 1.

Second semester, credit 5 units.

Plant Pathology 3; *FOREST PATHOLOGY*.—The course includes a study of forest protection and timber diseases. Methods of disease-prevention and timber preservation are considered. The course requires one lecture and six hours of field work weekly. Required in the degree course of the School of Forestry.

First semester, credit 3 units.

Plant Pathology 99; *SPECIAL PROBLEMS IN PLANT PATHOLOGY*.—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Plant Pathology 100; *UNDERGRADUATE THESIS IN PLANT PATHOLOGY*.—Credit for undergraduate theses is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Plant Pathology 103; *DISEASES OF FIELD CROPS*.—An advanced study of the important diseases of field crops. Two lectures and nine hours of field work weekly. Elective.

Prerequisite: Plant Pathology 1.

First semester, credit 5 units.

Plant Pathology 104; *DISEASES OF SUGAR CANE*.—A study of the symptoms, nature, method of transmission and control of important diseases of sugar cane. One lecture and six hours of field work weekly. Required in the Sugar Technology curriculum.

Prerequisite: Plant Pathology 1.

First semester, credit 3 units.

Plant Pathology 105; *MORPHOLOGY AND TAXONOMY OF PARASITIC FUNGI*.—Study of the morphology and taxonomy of parasitic fungi. The course consists of laboratory work and reading and abstracting the most important literature concerning the fungi which are of importance as disease producers. One lecture and six hours of laboratory work weekly. Elective.

Concurrent: Plant Pathology 1.

Throughout the year, credit 6 units.

Plant Pathology 199; *SEMINAR IN PLANT PATHOLOGY*.—The seminar consists of review and discussion of current literature in plant pathology. Reports are required. One meeting each week. Open only to senior, thesis, and graduate students.

Throughout the year, credit 2 units.

FOR GRADUATES

Plant Pathology 300; *MASTER'S THESIS IN PLANT PATHOLOGY*.—Credit for Master's theses is recorded under the number 300.

By arrangement, credit 10 units.

DEPARTMENT OF PLANT PHYSIOLOGY

Professor ESPINO (Head); Instructors JULIANO and PERALTA¹;
Assistants ESTIOKO and PANTALEON.

¹ On special detail in U. S.

FOR UNDERGRADUATES

Plant Physiology 1; *GENERAL BOTANY AND ELEMENTARY PLANT PHYSIOLOGY*.—This course deals principally with the study of the functions of organs, the physiology of nutrition, and the factors at work in plant growth and movement. Incidentally, the course includes also the study of the typical plant cell, the structures of economic plants, and a brief outline of the evolution of plants. The course requires three lectures and six hours of laboratory work a week. At least one trip to Mount Maquiling or Mount Banahao is required. Required in all curricula.

Throughout the year, credit 10 units.

Plant Physiology 2; *MORPHOLOGY OF AGRICULTURAL PLANTS*.—The structures of the major crops of the Philippines are studied with a view to the understanding of their functions. Rice, maize, sugar cane, coconut, abacá, tobacco, and other crop plants are studied. Also a few lectures on reproduction and reproductive structures of different types of plants are given. This course requires three lectures and six hours of laboratory work a week. Required in the Bachelor of Science in Agriculture curriculum; alternate, Agricultural Chemistry 3a.

Prerequisite: Plant Physiology 1.

First semester, credit 5 units.

Plant Physiology 3; *VETERINARY BOTANY*.—This course is essentially a study of plants of economic importance from the view point of the veterinarian. Fodder, medicinal, and poisonous plants receive particular attention. Fresh and herbarium specimens are examined and the students are trained to determine the identity of unknown plants and to perform qualitative micro-chemical tests on suspected poisonous species. The course requires two lecture hours a week.

Second semester, credit 2 units.

Plant Physiology 4; *ECOLOGY OF PASTURES*.—This course is especially designed for students majoring in Animal Husbandry. It includes the use of exact methods for determining the composition of the flora of pastures. A study of migration, invasion, competition, and dominance of the more important pasture plants, and improvement of pastures. The latter part of the course is devoted to a study of the poisonous plants found in pastures; and the qualitative tests of the toxic principles of the poisonous species. The course requires one lecture and six hours of field work a week. Elective.

Prerequisite: Plant Physiology 1.

Second semester, credit 3 units.

Plant Physiology 99; *SPECIAL PROBLEMS IN PLANT PHYSIOLOGY*.—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Plant Physiology 100; *UNDERGRADUATE THESIS IN PLANT PHYSIOLOGY*.—Credit for undergraduate theses is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Plant Physiology 101*; *PLANT NUTRITION*.—The physiology of plant nutrition and its practical application. Three lectures and six hours of laboratory work a week. Elective.

Prerequisite: Plant Physiology 1.

Throughout the year, credit 10 units.

Plant Physiology 102; *PLANT GROWTH AND MOVEMENT*.—Deals with the physiology, anatomy, and the physical phenomena of plant growth. The course requires three lectures and six hours of field work weekly. Elective.

Prerequisites: Plant Physiology 1 and 2.

Throughout the year, credit 10 units.

Plant Physiology 103; *LOCAL FLORA*.—A study of the classification of plants with emphasis on the study of the characteristics of families, genera, and species of plants growing on the Campus and its immediate vicinity. A collection and identification of at least one hundred species of plants is required. This course requires three lectures and six hours of field work a week.

Second semester, credit 5 units.

Plant Physiology 104; *FARM WEEDS*.—Determination of the common and injurious weeds on the farm; a study of their habits of growth and methods of reproduction; methods of eradication and control; their origin and distribution. The course includes also a study of the structure and ecology of weed seeds; principles of seed testing; and detection of weed seeds in commercial seeds. This course requires three lectures and six hours of field work a week. Elective.

Prerequisite: Plant Physiology 1.

First semester, credit 5 units.

Plant Physiology 105; *PLANT MICRO-TECHNIQUE*.—A course dealing with the principles of collecting, killing, fixing and staining plant materials for microscopical and histological studies. It includes frequent field trips and preparation of permanent slides of algae, fungi, mosses, ferns, and flowering plants. Elective.

Prerequisites: Agricultural Chemistry 2 and Plant Physiology 1.

Summer, credit 5 units.

* Students may enroll for work in the second semester and earn 5 units credit.

Plant Physiology 106; *PLANT MICRO-CHEMISTRY*.—Micro-determination of various substances with special reference to carbohydrates, fats and oils, and organic salts, found in various plant organs. Elective.

Prerequisites: Agricultural Chemistry 3 and Plant Physiology 1.

Summer, credit 5 units.

Plant Physiology 199; *SEMINAR IN PLANT PHYSIOLOGY*.—The seminar consists of review and discussion on current literature in plant physiology. Reports are required. One meeting each week. Open only to senior, thesis, and graduate students.

Throughout the year, credit 2 units.

FOR GRADUATES

Plant Physiology 300; *MASTER'S THESIS IN PLANT PHYSIOLOGY*.—Credit for Master's theses is recorded under the number 300.

By arrangement, credit 10 units.

DEPARTMENT OF RURAL ECONOMICS

Assistant Professor VELMONTE (In Charge of the Department); Instructor MABBUN¹; Assistants ARNALDO AND ROTOR.

FOR UNDERGRADUATES

Rural Economics 1; *FARM BOOKKEEPING AND ACCOUNTING*.—Systematic recording by approved accounting methods of transactions arising in the operation of a farming business to ascertain the exact gains and losses at the end of a certain period of operation; the recording of facts necessary for information and guidance in the economy and success of future operations. The course includes the use of a complete set of books; journal, ledger, trial balance, balance sheet, statement of profit and loss, purchase and sales books, etc. Exercises and lectures, two hours weekly. Required in all curricula.

Throughout the year, credit 4 units.

Rural Economics 2; *PRINCIPLES OF RURAL ECONOMY*.—General economics with emphasis placed on factors of production, mechanism of exchange, and problems of distribution, with particular and constant application to problems of Philippine rural economy. Two lectures and one recitation weekly, and a minimum of collateral reading. Text: CARVER.—*Principles of Rural Economics*; *Mimeographed Outlines*. Required in the Bachelor of Science in Agriculture curriculum.

Throughout the year, credit 6 units.

Rural Economics 3; *RURAL COOPERATION AND CREDIT*.—History, development, and mechanism of rural coöperation and credit in Europe, the United States, and the Philippine Islands. Emphasis is placed

¹On leave in the United States as University Fellow.

on the problem of devising an effective rural banking system in the Philippine Islands. Lectures and recitations requiring five hours weekly. In addition, considerable collateral reading is required. Texts: POWELL.—*Coöperation in Agriculture*; HERRICK.—*Rural Credits*. Elective.

Prerequisite: Rural Economics 2.

Second semester, credit 5 units.

Rural Economics 4; *COMMERCE OF SUGAR*.—The course is designed principally for students in Sugar Technology to acquaint them with the salient factors in the cost of production, marketing, and consumption of the world's supply of sugar. Two lectures and one recitation weekly, and collateral reading. Required in the Sugar Technology Curriculum.

First semester, credit 3 units.

Rural Economics 5; *MARKETING FARM PRODUCTS*.—A critical study of the marketing of farm products, including the fundamentals of marketing, methods and functions, a general description of various types of marketing organizations, types of middlemen, marketing costs, factors influencing prices, etc. Text: MACKLIN.—*Efficient Marketing for Agriculture*. Five lectures weekly. Elective.

Prerequisite: Rural Economics 2.

Second semester, credit 5 units.

Rural Economics 99; *SPECIAL PROBLEMS IN RURAL ECONOMICS*.—Credit for reports on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Rural Economics 100; *UNDERGRADUATE THESIS IN RURAL ECONOMICS*.—Credit for undergraduate theses is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Rural Economics 199; *SEMINAR IN RURAL ECONOMICS*.—The seminar consists of review and discussion of current literature in Rural Economics with presentation of papers. One meeting each week. Open only to senior, thesis, and graduate students.

Throughout the year, credit 2 units.

DEPARTMENT OF SOILS

Professors PENDLETON (Head) and ELAYDA (on detail); Instructor AQUINO.

FOR UNDERGRADUATES

Soils 1; *ELEMENTARY SOIL SCIENCE*.—Soils, including soil forming minerals, processes of soil formation; physical and chemical properties of soils; soil fertility and the factors affecting it. Text: LYON and BUCKMAN—*The Nature and Properties of Soils*. Five lectures weekly, with occasional field excursions. Required in all curricula.

First semester, credit 5 units.

Soils 2; *SOIL BACTERIOLOGY*.—Study of the occurrence and activities of soil bacteria and their relation to soil fertility. Three lectures and six hours of laboratory and field work weekly. Elective.

Prerequisite: Soils 1.

First semester, credit 5 units.

Soils 10; *SOIL PHYSICS AND MANAGEMENT*.—The physical properties of soils and their possible amelioration, with special reference to management for increased crop production. Soil survey and soil mapping. Three lectures and six hours of laboratory work weekly and occasional field trips. Elective.

Prerequisite: Soils 1.

Second semester, credit 5 units.

Soils 99; *SPECIAL PROBLEMS IN SOILS*.—Credit for report on assigned special problems is recorded under the number 99. See page 19 for regulations covering special problem courses.

By arrangement, credit 1 to 6 units.

Soils 100; *UNDERGRADUATE THESIS IN SOILS*.—Credit for undergraduate theses is recorded under the number 100. See page 19 for regulations covering undergraduate theses.

By arrangement, credit 10 units.

FOR UNDERGRADUATES AND GRADUATES

Soils 102; *SOIL FERTILITY*.—Soil chemistry and the principles of crop production; maintenance and improvement of the fertility of the soil; theory and practice of crop rotations; manuring, including the use of commercial fertilizers; and the practical bearing of these matters on Philippine agriculture. Text: BEAR—*Theory and practice in the use of fertilizers*. Three lectures and six hours of laboratory and field work weekly. Required for thesis students in soils.

Prerequisites: Soils 10, Plant Physiology 1, and Agricultural Chemistry 2.

First semester, credit 5 units.

Soils 199; *SEMINAR IN SOILS*.—Discussion of current research work in the department and a consideration of present day developments in soil science. Presentation of papers. Required of all students majoring in the Department. One meeting a week.

Throughout the year, credit 2 units.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS

Commandant Fidel V. Segundo, Capt. 24th F.A.(PS)., U. S. Army. Assistant Commandant JOSE E. OLIVARES, First Lieutenant 92nd CA (PS), U. S. Army. Assistants ANDRES M. CABRIDO, Sergeant Battery "C" 24th F.A. (PS) U. S. Army and NEMESIO OBAN, Corporal Company "L" 45th Infantry (PS) U. S. Army.

INFANTRY

Military Science 1; *FIRST YEAR BASIC*.—Infantry drill, rifle marksmanship, scouting and patrolling, military courtesy. Three hours weekly. Required of all university students, unless exempted, during their first year in the collegiate courses.

Throughout the year, credit 3 units.

Military Science 2; *SECOND YEAR BASIC*.—Map reading and sketching, infantry weapons, scouting and patrolling, musketry, command and leadership. Three hours weekly. For noncommissioned officers one extra hour weekly. Required of all University students, unless exempted during their second year in the collegiate courses.

Prerequisite: Military Science 1. (Infantry.)

Throughout the year, credit 3 units.

Military Science 3; *FIRST YEAR ADVANCED*.—An advanced course covering field engineering, chemical warfare, accompanying weapons, musketry and scouting, military law and rules of land warfare, map reading, command and leadership. Five hours weekly.

Prerequisite: Military Science 2. (Infantry.)

Throughout the year, credit 7 units.

Military Science 4; *SECOND YEAR ADVANCED*.—An advanced course covering chemical warfare, tactics, military history, administration, Field Engineering. Command and leadership. Five hours weekly.

Prerequisite: Military Science 3. (Infantry.)

Throughout the year, credit 7 units.

FIELD ARTILLERY

Military Science 1; *FIRST YEAR BASIC*.—Disciplinary drill, care and maintenance of equipment, artillery gun drill and artillery material. Three hours weekly.

Throughout the year, credit 3 units.

Military Science 2; *SECOND YEAR BASIC*.—Signal communications, the use of instruments and artillery gun drill.

Prerequisite: Military Science 1. (Artillery.)

Throughout the year, credit 3 units.

Military Science 3; *FIRST YEAR ADVANCED*.—An advanced course covering topography and orientation, signal communication, reconnoissance and occupation of position, and Field Artillery firing. Command and leadership. Five hours weekly.

Prerequisite: Military Science 2. (Artillery.)

Throughout the year, credit 7 units.

Military Science 4; *SECOND YEAR ADVANCED*.—An advanced course covering Military History, Military Law, Field Artillery firing and the tactical employment of Field Artillery. Command and leadership. Five hours weekly.

Prerequisite: Military Science 3 (Artillery.)

Throughout the year, credit 7 units.

DEPARTMENT OF PHYSICAL EDUCATION

Director Prof. CANDIDO C. BARTOLOME; Assistant Director NICOLAS S. MACHAN.

FOR UNDERGRADUATES

Physical Education 1; *HYGIENE*.—Personal hygiene. An elementary course emphasizing the importance of right living. Required of all first year collegiate students. Lectures, collateral reading, conferences. A written examination is required. The course requires one hour lecture weekly.

Throughout the year, credit 2 units.

Physical Education 2; *PROGRESSIVE MASS FREE HAND GYMNASTICS*.—Beginner's lessons in wrestling and boxing. Games and outdoor sports. The course requires one hour weekly.

Throughout the year, credit 2 units.

Physical Education 3; *PROGRESSIVE MASS FREE HAND GYMNASTICS AND LIGHT APPARATUS*.—Progressive lessons in boxing and wrestling. Games and outdoor sports. The course requires one hour weekly.

Throughout the year, credit 2 units.

Physical Education 4; *PROGRESSIVE GYMNASTICS*.—Light apparatus, graded heavy apparatus work consisting of simple exercise on horizontal bar, buck, parallel bars, horse, rings, and mats. Games and sports.

Throughout the year, credit 2 units.

COMPETITIVE ATHLETICS.—Instruction and supervision will be given in the following sports to candidates of the intercollegiate and intramural teams: Baseball, Basket-ball, Boxing, Gymnastics, Soccer Football, Tennis, Track and Field, Volley-ball, Wrestling, and Swimming.

Any of the foregoing competitive sports may be substituted for class work, provided that the attendance is at least three times a week.

VETERINARY SCIENCE

(Given in the College of Veterinary Science)

Veterinary Anatomy 6; *ELEMENTARY ANATOMY*.—The course is designed to meet the needs of agricultural students specializing in animal husbandry. It includes in a general way the anatomy of domestic farm animals, emphasizing conformation, the various levers of locomotion, and the digestive and respiratory systems. Laboratory work consists of studying and drawing the most important bones and such other parts of the body as the instructor may indicate. Demonstrations of previously dissected parts of the body are given from time to time. The course requires three lectures and six hours of laboratory work weekly. Prescribed elective for students majoring in Animal Husbandry.

First semester, credit 5 units.

Veterinary Medicine 6; *COMMON DISEASES OF ANIMALS*.—The course is designed to meet the needs of agricultural students specializing in Animal Husbandry. It embraces a consideration of the common diseases of horses, cattle, poultry, swine, sheep, and goats. The diagnosis and treatment of common ailments, sanitary measures, and minor surgical operations are also given attention. The course requires three lectures weekly. Prescribed elective for students majoring in Animal Husbandry.

Second semester, credit 3 units.

SCHEDULE OF CURRICULA

THE COLLEGE OF AGRICULTURE GENERAL COURSE

The College of Agriculture General Course leads to the degree of *Bachelor of Science in Agriculture* and consists of a four-year schedule of collegiate work and one summer of farm experience. The course is open to students who have completed the following subjects in a recognized secondary school:

Subjects	H. S. Units	Subjects	H. S. Units
Algebra	1½	Physics	1
Biology, Botany or Zoölogy .	1	Plane Geometry	1
Electives	4½	English	5
History	2		
		Total	16

The schedule consists of 227+ week-hours carrying 180 semester units and is arranged as follows:

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AgChem 1a	9	5	AgChem 1b	9	5
Agron 1	6	2	Agron 1	6	2
Soils 1	5	5	AniHus 1	3	3
Math 1	3	3	Physics 1	9	5
REcon 1	2	2	REcon 1	2	2
Zoöl 1	9	5	Entom 1	9	5
Milit Sc 1	3	1½	Milit Sc 1	3	1½
Phys Ed 1	1	1	Phys Ed 1	1	1
Totals	38	24½	Totals	42	24½

SUMMER SESSION

[Six Weeks]

	Hours
FExper A	15
FExper B or	9
FExper H	(9)
FExper C	9
Total	33

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AgChem 2	9	5	Agron 3	5	5
Agron 2	9	5	PPath 1	9	5
AniHus 2	6	2	AniHus 2	6	2
English 1a	5	5	English 1b	5	5
PPhysl 1	9	5	PPhysl 1	9	5
Milit Sc 2	3	1½	Milit Sc 2	3	1½
Phys Ed 2	1	1	Phys Ed 2	1	1
Totals	42	24½	Totals	38	24½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AgEngin 1	5	3	AgEngin 2	5	3
PPhysl 2 or	(9)	(5)	AgEngin 3	5	3
AgChem 3a	9	5	REcon 2	3	3
REcon 2	3	3	Presc'd Elect ¹ .....	..	5
Presc'd Elect ¹ .....	..	5	Major .....	..	5
Major .....	..	5	Phys Ed 3	1	1
Phys Ed 3	1	1			
Totals	18+	22	Totals	14+	20

¹ To be prescribed by the Head of the Department under which the student is majoring.

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Elective .....	..	5	Elective .....	..	5
Presc'd Elect ¹ .....	..	3	Presc'd Elect ¹ .....	..	3
Major .....	..	11	Major .....	..	11
Phys Ed 4	1	1	Phys Ed 4	1	1
Totals	1+	20	Totals	1+	20

¹ To be prescribed by the Head of the Department under which the student is majoring.

THE BACHELOR OF SCIENCE ANIMAL HUSBANDRY CURRICULUM

The Bachelor of Science Animal Husbandry Curriculum leads to the degree of *Bachelor of Science in Agriculture* and consists of a four-year schedule of collegiate work and one summer of farm experience. The curriculum is open to graduates of recognized secondary schools on the same conditions as the College of Agriculture General Course for which see page 52 of this bulletin. Final enrollment in the course will, however, depend upon the student's adaptability to animal work as demonstrated in the first two years of residence.

THE COMBINED ANIMAL HUSBANDRY AND VETERINARY CURRICULUM

This curriculum is designed particularly for those students who wish to go into live stock farming fully prepared to meet all problems incident to the care of animals in both health and disease, and for those students who wish to go into the veterinary profession with a good agricultural background.

The first four years of the course are given in the College of Agriculture and lead to the degree of *Bachelor of Science in Agriculture*. The last two years or more are given in the College of Veterinary Science; upon completion of the work of this part of the course, the student will be recommended for the degree of *Doctor of Veterinary Medicine* by said College. The curriculum is open to graduates of recognized secondary schools on the same conditions as the College of Agriculture General Course for which see page 52 of this bulletin. Final enrollment in the course will,

however, depend upon the student's adaptability to animal work as demonstrated in the first two years of residence.

Credit in Plant Physiology 1 is accepted by the College of Veterinary Science in lieu of Plant Physiology 3, Veterinary Botany.

THE SUGAR TECHNOLOGY CURRICULUM

The Sugar Technology Curriculum leads to the degree of Bachelor of Science in Sugar Technology. The curriculum consists of a four-year schedule of collegiate work. The course is open to graduates of recognized secondary schools who have completed the first year of the College of Agriculture General Course with an average rating of 2½ or better, and who have taken Mathematics 5 (Elementary Mathematical Analysis) and Agricultural Engineering 4 (Mechanical Drawing). No student receiving a grade of "4" or "5" in any subject will be admitted. The schedule consists of 553+ week-hours carrying 179 semester units and is arranged as follows:

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AgChem 2	9	5	AgEngin 3	5	3
AgChem 3a	9	5	AgChem 3b	9	5
Agron 2	9	5	Math 101	3	3
AniHus 2	6	2	AniHus 2	6	2
PPhysl 1	9	5	PPhysl 1	9	5
Milit Sc 2	3	1½	Physics 2	5	3
Phys Ed 2	1	1	Milit Sc 2	3	1½
			Phys Ed 2	1	1
Totals	46	24½	Totals	41	23½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AgChem 4	5	3	AgChem 4	5	3
Entom 104	7	3	AgEngin 2	5	3
AgEngin 1	5	3	Agron 22	9	5
Agron 7	9	5	Agron 23	5	3
English 2	5	5	AgChem 120	7	3
Math 102	3	3	PPath 1	9	5
Phys Ed 3	1	1	Phys Ed 3	1	1
Totals	35	23	Totals	41	23

SUMMER SESSION

Sugar Technology 1a—Total hours, 128—2 units.

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AgChem 5	3	3	STech 1b	64	1
English (Elect)	5	5			
PPath 104	7	3			
STech 2	9	5			
STech 3	5	3	STech 4	64	16
STech 100a .....	..	2			
STech 199a	1	1			
Phys Ed 4a	1	1	STech 100b .....	..	3
Totals	31+	23	Totals	128	20

FOURTH YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
REcon 4	3	3			
STech 5	9	5			
STech 6	9	5			
STech 100c .....	..	5			
STech 199b	1	1	STech 7	80	20
Phys Ed 4b	1	1			
			Totals	80	20
Totals	23+	20			

THE CERTIFICATE IN AGRICULTURAL EDUCATION

For the purpose of preparing teachers of agriculture, the College offers a course in Agricultural Education leading to a Certificate. Under favorable conditions a student may complete the work required for both the degree of Bachelor of Science in Agriculture and Certificate in Agricultural Education within four years by taking their prescribed and free electives in agricultural education. No student will be granted the certificate unless the candidate is a holder of the B. S. A. degree or the B. S. A. degree is to be conferred concurrently.

The following requirements must be met for the Certificate in Agricultural Education:

1. Students must be majoring, or have majored in Agronomy (Farm Crops or Horticulture), Animal Husbandry or Agricultural Engineering.

2. Students who are candidates for the Certificate must file a written application for same at the beginning of their Junior year—or when they take up work in the Department of Agricultural Education. Admittance to candidacy will be decided by a committee composed of the Head of the Department of Agricultural Education as Chairman, and the Heads of the Departments of Agronomy, Animal Husbandry, English and Agricultural Engineering as members; this committee will render decision before the end of the student's Junior year. The action of the committee shall be based upon the applicant's previous scholastic records and his apparent fitness for teaching.

The schedule consists of 17+ week-hours carrying 26 semester units and is usually arranged as follows:

JUNIOR YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Credits		Hours	Credits
Ag Ed 1	3	3	Ag Ed 3	3	3
Ag Ed 2	3	3	Ag Ed*	3	3

SENIOR YEAR

Ag Ed 101	3	3	Ag Ed 101	3	3
Ag Ed 111	—	3	Ag Ed 111	—	3
Ag Ed 199	1	1	Ag Ed 199	1	1
Totals	10+	13	Totals	10+	13

* To be prescribed by the Head of the Department of Agricultural Education.



U. P. Rural High School

OFFICERS OF ADMINISTRATION

Dean, College of Agriculture: Dr. BIENVENIDO M. GONZALEZ.

In Charge, Department of Agricultural Education, and Acting Principal:

Dr. FRANCISCO M. SACAY.

Field Manager: PEDRO MONTELLANO.

Clerk: GREGORIO GOCO.

FACULTY OF INSTRUCTION

PEDRO MONTELLANO, B.Agr., B.S.A., M.S.,

Teacher on detail by the Bureau of Education.

ELVIE B. FRASER, B.Ped.,

Assistant Professor of English.

ANDRES P. AGLIBUT, B.S.A.E., M.S.,

Instructor in Physics.

TEODOSIO BUENAVENTURA, LL.B.,

Instructor in History.

PAULINO E. COSTA, B.S.,

Instructor in Horticulture.

ANTONIO L. ROCAFORT, B.Agr., B.S.A.,¹

Instructor in Physics.

LAURA MAE WILLIAMSON, A.B.,

Instructor in English.

EUGENIO AGUDO, B.Agr., B.S.A.,

Assistant Instructor in Animal Husbandry.

FRANCISCO BARROS, B.S.A. (Certificate in Ag. Ed.)

Assistant Instructor in Farm Crops.

NICANOR M. CASTILLO, B.Agr., B.S.A., (Certificate in Ag. Ed.)

Assistant Instructor in Mathematics.

SISENANDO REANTASO, B.Agr., B.S.A.,

Assistant Instructor in Science.

ALBINO P. VARONA, B.S.A., (Certificate in Ag. Ed.)

Assistant Instructor in Farm Management.

¹ On leave.

THE U. P. RURAL HIGH SCHOOL

PURPOSE

The University of the Philippines Rural High School was established in June, 1929, as a subsidiary of the Department of Agricultural Education of the College of Agriculture. It is intended to serve as a practice school for the training of teachers of agriculture, as a field for the study of problems in agricultural education, to train intermediate school graduates in agriculture, and to prepare them for advanced education.

ADMISSION REQUIREMENTS

Applicants for admission must be graduates of an approved intermediate school, and upon matriculation, present identification cards showing an average grade of 75 per cent or above in English subjects and arithmetic.

No tuition fee is charged in the U. P. Rural High School. The following incidental fees of the College of Agriculture are collected from high school students at the time of matriculation: Entrance fee—P5 to be paid upon student's admission to the University: lab. fee—P5; to be paid by student in Biology and Physics; library fee—P4; athletic fee—P3; Medical fee—P4; U.P. Rural High School student body fee—P1. All fees are for the entire year; no students are matriculated at the beginning of the second semester. A general deposit for P15 is also required.

Entire self-support is practically impossible for Rural High School students.

CURRICULUM

The work of the U. P. Rural High School is on the same basis as the regular rural high schools under the Bureau of Education, but with certain modifications in order to meet the needs of students leaving before graduation, and of those pupils who expect to go beyond the high school.

First Year	Second Year	Third Year		Fourth Year
Literature (4) Current Events (1)	Literature and Composition (4) Current Events (1)	Literature and Composition (4) Current Events (1)		Literature and Composition (4) Current Events (1)*
Composition (5)	Biology (5)	General History (5)		U.S. History (5) | Philippine History and Government (5)
Algebra (5)	Geometry (5)	Advanced Algebra (5)	Plant Diseases and Pests (5)	Physics (5)
Horticulture (5)	Animal Husbandry (5)	Farm Crops (5)		Farm Economics (5)

Field work 3 hours daily and 4 hours on Saturdays.

Physical Education and Group games for all students.

* By faculty arrangement current events may be included with history.

The College of Veterinary Science

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA
Dean of the College: Dr. GREGORIO SAN AGUSTIN
Secretary: Dr. LOPE M. YUTUC

HEADS OF DEPARTMENT

Anatomy: Dr. MANUEL D. SUMULONG
Pathology and Bacteriology: Dr. A. K. GOMEZ
Parasitology: Dr. Z. de JESUS (in charge)
Surgery: Dr. GREGORIO SAN AGUSTIN
Medicine: Dr. LOPE M. YUTUC (in charge)
Pharmacology and Physiology: Dr. RAMON Q. JAVIER (in charge)
Hygiene: Dr. MANUEL VILLANUEVA (in charge)

CLERK

Chief Clerk and Property Clerk: Mr. TOMAS REVUELTA

CHAIRMAN OF STANDING COMMITTEES

Athletics: Dr. TOMAS T. DAVID
Buildings and Grounds: Dr. G. SAN AGUSTIN
Catalogue: Dr. L. M. YUTUC
Clinical Materials: Dr. ANGEL K. GOMEZ
Curriculum: MANUEL D. SUMULONG
Library and Supplies: Dr. Z. DE JESUS
Publication: Dr. A. K. GOMEZ
Scholarship: Dr. MANUEL D. SUMULONG
Student Affairs: Dr. LOPE M. YUTUC

BUSINESS DIRECTORY

OFFICE OF THE DEAN: The office of the Dean is located in the main Veterinary Building, College Campus, Los Baños, Laguna.

CORRESPONDENCE: Address all correspondence to the Dean, College of Veterinary Science, Los Baños College, Laguna, P. I.

FACULTY OF INSTRUCTION

RAFAEL PALMA, B.A., LL.B., LL.D.,

President of the University.

GREGORIO SAN AGUSTIN, D.V.M.,

Dean of the College and Professor of Veterinary Surgery.

BIENVENIDO M. GONZALES, Agr., M.S., Sc.D.,¹

Professor of Animal Husbandry.

RAFAEL B. ESPINO, B.Agr., Ph.D.,¹

Professor of Plant Physiology.

FRANCISCO O. SANTOS, A.B., M.S., Ph.D.,¹

Professor of Chemistry.

ANGEL K. GOMEZ, D.V.M.,

Professor of Pathology and Bacteriology.

MANUEL D. SUMULONG, M.S., D.V.M.,

Associate Professor of Veterinary Anatomy.

ZACARIAS DE JESUS, D.V.M.,

Assistant Professor in Parasitology.

RAMON Q. JAVIER, D.V.M.,

Instructor in Physiology and Pharmacology.

TOMAS T. DAVID, D.V.M.,

Instructor in Veterinary Anatomy.

ARCADIO C. GONZAGA, D.V.M.,²

Instructor in Veterinary Hygiene.

LOPE M. YUTUC, D.V.M.,

Instructor in Veterinary Medicine.

JOSE B. UICHANCO, D.V.M.,

Instructor in Veterinary Pathology and Bacteriology.

MANUEL VILLANUEVA, D.V.M.

Instructor in Veterinary Hygiene.

¹ Faculty members from the college of Agriculture giving instruction to veterinary students.

² On leave in the United States as U.P. fellow.

THE COLLEGE OF VETERINARY SCIENCE

HISTORY

The College of Veterinary Science derives its origin from the Act founding the University of the Philippines, enacted June 18, 1908, by the First Philippine Legislature in special session. Buildings for the College were erected on land adjoining the Animal Quarantine Station at Pandacan, Manila, and classes opened June, 1910. During the year 1919, the College was transferred, to the Campus of the College of Agriculture at Los Baños. In November, 1920, the Veterinary Clinic and Hospital were opened. It is believed that close association of these two colleges will prove of great advantage to the animal industry of the Islands.

OBJECTS OF THE INSTITUTION

In the Philippine Islands there are enormous losses from diseases of live stock and it is therefore necessary to have professionally educated men to cope with the difficulties encountered in fighting these diseases. A century ago, Europe was stimulated by the ravages of rinderpest to establish the first veterinary colleges enjoying Government aid. The same force has now been exerted in the Philippine Islands. The prosperity of these Islands is dependent upon agriculture, and that in turn is conditional upon the presence of a large body of well-trained men capable of coping with the problems of animal diseases.

While rinderpest, a disease of bovines, is now occupying special attention, the combating of surra in horses is of no less importance and nowhere in the world are there opportunities for a comparative study of various diseases of live stock than in these Islands. At present there are few Filipino veterinarians and but few private practitioners of Veterinary Medicine in the Islands.

The first Philippine Legislature displayed foresight in providing opportunity for Filipinos to become trained in a profession that bears a vital relation to the prosperity of the country.

LOCATION AND BUILDINGS

A single-story building, situated at the entrance to the College Campus, contains the laboratories of Pathology and Bacteriology, Pharmacy and Physiology, Zoölogy and Parasitology, and some faculty offices. A large structure with several stalls not very far from this building, serves as quarters for the hospital and operating room of the large animal clinic. Several other structures, situated on the grounds of the College, afford also accommodations for small animal clinic, post-mortem, horseshoeing, quarters for laboratory animals, and isolation ward. The departments of Anatomy and Surgery and the Administrative office and library are housed in the new single-story building situated at the entrance of the college campus opposite to the building mentioned above.

ENTRANCE REQUIREMENTS

Candidates for admission to this College must be graduates of the General Secondary Course of the Public Schools of the Philippines or of accredited private schools or colleges, must pass a physical examination, and must comply with the requirements as mentioned on pages 24 and following of the general catalogue.

SPECIAL STUDENTS

Any adult person may be admitted as a special student in any course in the College of Veterinary Science subject to the approval of the department in which courses are taken, but such students are not considered candidates for graduation.

EXAMINATIONS

At the end of each semester, or upon the completion of each subject, there will be a final examination. Other examinations may be held at such other times during the semester as the instructor of any course may deem necessary.

FEES AND DEPOSIT

There is no tuition fee in the College of Veterinary Science except a deposit of P15 in addition to the following incidental and laboratory fees: Entrance—P5 to be paid upon the student's admission to the University; Registration—P5 a semester. Library—P5 a year; Medical—P2 a semester; Athletic fee—P1.50 a semester; *Philippine Collegian*—P1 a semester; U. P. Student Council—P0.50 a semester. Laboratory fees (1) Chemistry—P15, (2) Zoölogy—P10.

The following is a summary of the total amount of fees to be paid by each student registered in this college at the beginning of each semester:—

Years	1st. Semester	2nd. Semester
First	P60.00 (x)	P25.00
Second }		
Third }	15.00	10.00
Fourth }		

(x) This includes the amount of P15.00 for deposit. It will be refunded to the student at any time he leaves the University.

GRADUATION WITH HONORS

The degree of Doctor of Veterinary Medicine "with honors" (cum laude) shall be granted to students in the regular course who have obtained an average of 1.60 or better without "4" or "5" and a grade of 3 in not more than 10 per cent of all subjects taken during four years' residence in the College.

The degree of Doctor of Veterinary Medicine "with high honors" (magna cum laude) shall be granted to students in the regular course who have obtained an average grade of 1.50 or better without 3 in all subjects taken during four years' residence in the College.

The degree of Doctor of Veterinary Medicine "with highest honors" (summa cum laude) shall be granted to students in the regular course

who have obtained an average grade of 1 in not less than 75 per cent of all subjects taken during four years' residence in the College and a grade of 2 in all other subjects.

SCHOLARSHIPS

Government scholarships.—There are twenty pensionados maintained at government expense provided for in Act No. 2302 of the Third Philippine Legislature. These are open to competition by all students of the College. For a statement of the provisions regulating the award and tenure of the scholarships, refer to page —.

The S. P. C. A. Scholarship.—The society for the protection against cruelty to animals has created and awarded scholarship to one of the bright and deserving students beginning the academic year 1930-1931.

Buencamino scholarship medal.—Doctor Victor Buencamino, the first Filipino veterinarian and former professor of the College, makes an annual award of a gold medal beginning the academic year 1930-1931 to a regular senior student of the College of Veterinary Science who shall have obtained the highest average grade in his class during his four years' residence in the college.

The computation of averages shall be made by the faculty scholarship committee and approved by the faculty. This shall consist of the sum of the semestral grades in all subjects taken from the first year to the fourth year inclusively, divided by the number of subjects.

The medal shall be awarded to the qualified student by the Dean immediately after the faculty meeting for graduation in March.

MILITARY SCIENCE AND PHYSICAL TRAINING

All male students in the University are required to take three hours a week of military training during the first two years of residence, unless excused therefrom for physical disability or other valid reason by the Committee on Military Science and Tactics.

They are also required to complete not less than eight units of credit in physical education unless exempted from this requirement by the University physician. Exemption is granted only on the ground of physical disability. Students who are thus exempted are required to take in lieu of this exemption such theoretical courses as may be offered by the Department of Physical Education.

During the freshman year, students not exempted from this requirement, will have to take two hours of physical education a week—one hour lecture on personal and community hygiene, and the other, practical. The sophomores and juniors will take one hour a week of practical work.

This is a society composed of the Junior and Senior students, organized for the purpose of giving mutual aid in gaining general and special medical knowledge, and of encouraging investigation work on all lines of research in veterinary science.

This society meets monthly while the college is in session. Prominent scientific men are invited to give lectures during some of the meetings.

RESIDENCE

Residence in Los Baños is required of all students, and any change in address must be reported at the office of the Secretary.

REMOVAL OF CONDITION

For the removal of condition, students shall have the privilege of taking one examination during the week preceding the opening of the following session or any other examination required by the faculty without the payment of a fee. Examination may be held at other times only by special permission of the faculty and on payment of ₱10, provided that all conditions must be made up before the opening of the following session. Students who are not in residence are allowed to take examination for the removal of condition only upon payment of the registration fee of ₱5 and of such other fee as may be required by the Registrar.

REQUIREMENTS FOR GRADUATION

In order to receive the degree of Doctor of Veterinary Medicine (D.V.M.) a candidate must be twenty-one years of age and must have successfully completed the prescribed four-year course to the satisfaction of the Faculty. He must have spent at least two years of residence in this College and must be recommended to the Board of Regents by the University Council

SCHOLARSHIP RULES.—The following rules, designed to maintain good scholarship at the College, are in force:

“Rules to Govern the Treatment of Delinquent Undergraduate students and the Action of the Committee on Scholarship in the College of Veterinary Science as adopted, approved and amended by the faculty thereof.

The Secretary shall be guided by the application of the following rules regarding failures and conditions:

1. (a) All conditions must be made up within one year, otherwise, the grade of 4 automatically becomes 5. For the removal of conditions, students shall have the privilege of taking one examination during the week preceding the opening of the following session or any other examination required by the faculty without the payment of a fee. Examination may be held at other times only by special permission of the faculty and on payment of ₱10, provided that all conditions must be made up before the opening of the following session. Only students who are in residence will be allowed to take examination for removal of conditions.

(b) A student receiving a grade of 5 in any subject has failed in the course and must repeat the subject. In general student who has failed twice in any given course will not be given further privilege to register in said course. Upon the consent of the Faculty, however, he may be allowed

to register for the third time, or he may be permitted to take the work under a reputable private tutor, whereupon he will be excused from the actual class work but must take the final examination, unless otherwise directed by the Faculty.

(c) No student will be recommended for a degree until all required subjects have been satisfactorily completed. A student deficient in any of the subjects required for admission who may, in spite of such deficiencies be admitted, must make up all deficiencies within one year. Such arrangement is more likely necessary in case of foreign students, who shall be treated with every possible consideration.

REGISTRATION AND MATRICULATION RULES.—The action of the Secretary shall be based on the application of the following rules:

2. (a) Students shall not be allowed to make changes in registration for courses of study after two weeks from the opening of classes. A student laborer may be allowed to drop any subject during the first half of the first semester if he shows evidence that he is unable to carry the work he matriculated in and earn a living at the same time.

(b) Students allowed to drop subjects on or before two weeks after the opening of classes, shall not be given a grade by the instructor.

(c) A student registering in a given course of study who does not apply for change of registration before two weeks after the beginning of classes, must complete the term's work in the chosen course, otherwise he will be given a grade of FIVE in that subject.

(d) No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean; provided, that no student may matriculate or enroll in a course later than two weeks after classes begin. To meet special conditions, the dean may shorten this period of extension.

(e) Students shall not be admitted to late registration unless a written excuse from the Dean is secured.

(f) Any student who drops a course or withdraws from the college without the approval of the dean, shall be subject to curtailment of registration privileges.

3. Any student whose average semestral grade is as low as 5 in one subject or as low as 4 in two subjects shall be considered delinquent.

4. Any student found delinquent as per Rule 3 shall be advised by the Secretary before or during the ensuing registration period. And when matriculating, delinquencies which constitute a failure must be given the preference over the new subjects.

5. Students of the first and second year classes shall be automatically dropped from the College if at the end of a semester they get a record lower than three grades of 4 or one of 5 and one of 4, while students of the Third and Fourth years with such poor records will be required to take the subjects in which they are delinquent and such subject shall constitute their schedule.

6. *Probation.*—Students dropped from any subjects or suspended by reason of delinquency in class work shall be allowed to reenter at the opening of the succeeding college year. Similar failures the following year will result in automatic dismissal from the College, subject to the provision of section (b) of Rule 1.

7. No student on probation will be allowed to hold any student assistantship in the college. In the case of student-laborers the number of hours they may be permitted to work for their living shall be limited at the discretion of the Dean.

8. *Notice to Parents or Guardians.*—In all cases of delinquency under any of the foregoing sections, information as to such delinquency shall be promptly sent to the parents or guardians concerned.

9. The Dean of the College of Veterinary Science may at his discretion waive any of the provisions of these rules, if in his opinion the interest of the college demands such action.

RULES GOVERNING EXCUSES FOR ABSENCES.—1. Any student, who for unavoidable cause, is obliged to absent himself from any class must obtain an excuse written on U. P. Form No. 97 from the dean to be presented to the instructors.

2. Excuses for absences shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

3. Excuses are for time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

4. Certificates of absences due to illness must be secured from the College Physician.

5. Penalties for absences shall be as follows:

(a) *For unexcused absences.*—Each unexcused absence from any class shall constitute zero for the day's work in the class.

(b) *Excused absences.*—In case work has not been made up as per paragraph 2 above, excused absences are to be penalized by one of the following methods in the option of instructor concerned:

1. Giving extra work, or

2. Giving 85 per cent of grade earned.

(c) When the number of hours lost by absence of a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any other schedule work in one subject for that semester, he shall be dropped from the class roll with a grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

(d) A student shall be given a grade of incomplete in a course if he is absent from the final examination provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of the dean.

6. Instructors shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

7. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to the dean. If the petition is granted the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall

file with the dean of the college. Without such petition and favorable action no record of honorable dismissal will be made.

8. Attendance in the Graduate School shall not be governed by the foregoing rules.

RULES ADOPTED BY THE FACULTY OF THE COLLEGE OF VETERINARY SCIENCE GOVERNING THE SELECTION OF GOVERNMENT PENSIONADOS AS PROVIDED IN ACT 2302.—The Faculty Scholarship Committee shall decide the distribution and selection of scholarship granted by the Government to the College of Veterinary Science among the four classes of the College. The pension shall be awarded on the following points:

1. The student shall be at least 18 years old. He must be a regular student of the College of Veterinary Science. He must have at least an average of 2 in all academic subjects required for graduation and possess a high scholastic and moral standing.

2. No student shall be awarded a scholarship unless he fulfills the requirements of the above paragraph. Any delinquent subject in his record is sufficient to disqualify him

3. The awarding of scholarships to members of the first year class shall take place on August 15, thereby allowing a period of probation during which instructors will have an opportunity of becoming acquainted with the students through personal contact and of appraising their scholastic abilities. With the upper classmen, however, the awarding of pension shall be made shortly after the opening of classes and in accordance with their records of the preceding term, the highest general average, other things being equal, shall be the deciding factor.

4. The decision of the Faculty Scholarship Committee shall, however, be subject to the final approval of the Faculty of the College of Veterinary Science.

5. Pensions are awarded every semester.

6. Scholarships that are not utilized during the academic year shall be granted to the juniors as allowances in case their services are engaged by the Bureau of Animal Industry during summer vacations.

Students holding scholarships from the Government shall not be exempt from the rules governing the treatment of delinquent students adopted by the same committee.

THE SEMESTRAL COURSES

VETERINARY ANATOMY

Associate Professor SUMULONG and Instructor DAVID

The Department of Anatomy gives instruction both to Veterinary and Animal Husbandry students of the College of Agriculture. In Gross Anatomy the instruction is mostly by laboratory work and recitations; lectures supplemented with demonstration are only given on those parts which are not very clear to the students. Special emphasis is placed on the anatomical relations of those parts which are most directly related to surgical operations. Preserved cadavers are employed for dissection in order to give the students sufficient time to study and observe the relative positions of the various parts of animal body.

For demonstration the Department has a sufficient collection of charts and mounted and unmounted anatomical specimens. An abundant supply of disarticulated skeletons of different species of domestic animals is also available. For the instruction in Embryology the laboratory is equipped with reconstructed models of amphioxus, frog, chick, and other animals.

VETERINARY ANATOMY 1.—This course includes the study of the bones, articulations and muscles of the horse. In Osteology the students are required to study and make drawings—made to scale—of the different bones. Arthrology is given immediately after Osteology, and the instruction is mostly by laboratory work, consisting of the dissection of the various structures that enter into the formation of different joints, together with the consideration of their various movements. Preserved specimens are employed for the dissection. The students are quizzed twice

a week on the assignments given them from time to time and on the work covered in the laboratory .

In Myology, which immediately follows Osteology and Arthrology, each student completes the dissection of every muscle of one-half of the horse's body. The class is divided into groups of two students, each group working on an assigned region of the body. The group or groups working on the same region are given a definite number of muscles to be dissected and studied during each laboratory period. Students are required to demonstrate to the instructor the dissected muscle and other structures during the laboratory hours, and they are quizzed twice a week on all the work performed.

11 hours a week (9 Lab. 2 Recitation-demonstration); first year, first semester, credit 5 units. Total, 176 hours.

VETERINARY ANATOMY 2.—This course comprises Angiology, Neurology, and Splanchnology of the horse and Comparative Osteology and Arthrology. The course is taught by recitations, demonstrations, and laboratory work, but mostly by the latter. Each student has to complete the dissection of one-half of the body. At the beginning of each laboratory period the students are quizzed on the parts assigned and dissected during the last laboratory hours.

In Comparative Osteology and Arthrology the bones of carabao, ox, pig, and dog are studied in the same way as those of the horse, giving special attention to those bones and articulations which present prominent differential characteristics.

Prerequisite: Anatomy 1

14 hours a week (12 Lab, 2 Recitation-demonstration); second semester, credit 6 units. Total 224 hours.

VETERINARY ANATOMY 3.—This course consists of systematic dissection of muscles and vascular, nervous, digestive, respiratory and urogenital systems of ox or carabao, goat, pig, and dog. Special emphasis is laid on the digestive and uro-genital systems of ruminants and on those organs and structures presenting marked differential features. The class is divided into groups and each group is given a definite assignment from time to time until the dissection of the entire half of the given cadaver is completed. During the laboratory hours the students have to demonstrate to the instructor the parts dissected; they are quizzed twice a week on all the work covered in the last dissection period.

Prerequisites: Anatomy 1 and 2.

11 hours a week (9 Lab, 2 Recitation-demonstration); first semester credit 5 units. Total, 176 hours.

VETERINARY ANATOMY 4.—This course is designed to give the student a good knowledge of the gross and microscopic anatomy of the special sense organs and of the foot of the horse; and to emphasize those parts of the body most concerned in surgical operations. In the laboratory the students dissect and sketch the foot, the eye and the ear of the horse and ox; stained microscopic sections of the eye and ear and embryonic

foot of the horse are also studied. Each student is required to study and sketch the different preserved cross-sections and dissections of those parts of the horse's body most commonly subjected to surgical and diagnostic procedures. Living horses are frequently used to demonstrate the most salient features that serve as landmarks for surgical fields.

Prerequisites: Anatomy 1 and 2.

8 hours a week (6 Lab, 2 Lectures-Recitation); 1st yr., second semester, credit 4 units. Total, 128 hours.

VETERINARY HISTOLOGY.—This course is taught by lectures, recitations, and laboratory work. The course is intended to give the student a good knowledge of the minute anatomy of the various tissues and organs of the animal body. Each student is provided with a microscope, laboratory direction, and a collection of more than 100 slides of stained microscopic sections from dog, pig, cat, and other domestic animals.

Prerequisites: Zoology 1 and Anatomy 1.

8 hours a week (6 Lab, 2 Lectures-Recitation); 1st yr., second semester, credit 4 units. Total, 128 hours.

VETERINARY EMBRYOLOGY.—This course consists of the study of the origin and development of the various tissues and organs of the domestic animals and the appendages of the fetus. A general consideration of sex and inheritance and various phenomena related to the process of reproduction is also taken up in the lectures. In the laboratory each student is required to study and sketch both fresh and whole-mount chick embryos of different incubation periods. The developing organs are studied in serial sections of both pig and chick embryos.

5 hours a week (3 Lab, 2 Lecture or Recitation); first year, first semester, credit 3 units. Total, 80 hours.

PHARMACOLOGY AND PHYSIOLOGY

Instructor JAVIER (in charge)

Veterinary Pharmacology 1; *MATERIA MEDICA AND PHARMACY.*—A consideration of the properties of drugs, their official names, synonyms, sources, physical character, and incompatibilities. Laboratory work includes the compounding of the most important pharmaceutical preparations and training in dispensing is given in the Pharmacy of the College.

Prerequisite: Chemistry: 3a.

5 hours a week (3 Lab, 2 Lect); second year, second semester, credit 3 units. Total, 80 hours.

Veterinary Pharmacology 2; *MATERIA MEDICA AND THERAPEUTICS.*—A consideration of the most important drugs indicated for therapeutic purposes.

Prerequisite: Pharmacology 1.

6 hours a week (3 Lab, 3 Lect); third year, first semester, credit 4 units. Total, 96 hours.

VETERINARY PHYSIOLOGY.—This course deals with the physiology of muscle, nerve, blood, lymph circulation, respiration, digestion, secretions, excretions, animal heat and special sense organs. Metabolism and the chemistry of the different foodstuffs are included. A consideration of the locomotor system including the static and kinetic functions of the joints, muscles, tendons and ligaments that are concerned therewith, and the various phases of locomotion as well as the physiology of the foot, are also taken up. The laboratory exercises are selected to illustrate the subject matter of the didactic course. Given throughout the year.

Prerequisite: Anatomy 2, Zoology I and Chemistry I.

5 hours a week (2 Lect, 3 Lab); second year, first semester, credit 3 units. Total, 80 hours.

4 hours a week (1 Lect, 3 Lab); second year, second semester, credit 2 units. Total, 64 hours.

PATHOLOGY AND BACTERIOLOGY

Professor GOMEZ and Instructor UICHANCO

Bacteriology 1; GENERAL BACTERIOLOGY.—This course includes a study of the structure, classification, and life processes of nonpathogenic bacteria. Lectures, quizzes, and laboratory work are designed to teach the student methods of cleaning and sterilizing glassware, methods of preparing culture media, isolation of pure cultures, staining bacteria, and detecting the products of their growth. A study of the bacteriology of milk and water is included in the course.

8 hours a week (6 Lab, 2 Lect); second year, first semester, credit 4 units. Total, 128 hours.

Bacteriology 2; PATHOGENIC BACTERIOLOGY.—This course includes thorough systematic study of various pathogenic bacteria, supplemented by lectures and demonstrations and individual laboratory work on bacteriological diagnosis. Lectures and demonstration on serology and vaccine therapy are also included in this course.

Prerequisite: Bacteriology I.

8 hours a week (6 Lab, 2 Lect); second year, semester, credit 4 units. Total, 128 hours.

Veterinary Pathology 1; GENERAL PATHOLOGY.—The systematic study of disease processes with laboratory work on pathogenic histology, supplemented by demonstration of pathological specimens from time to time.

Prerequisites: Histology and Bacteriology 2.

8 hours a week (6 Lab, 2 Lect); third year, first semester, credit 4 units. Total, 128 hours.

4 hours a week (3 Lab, 1 Lect); second semester, credit 2 units. Total, 64, hours.

Veterinary Pathology 2; SPECIAL PATHOLOGY.—This course includes the study of the pathology of the different organs, embracing the blood and blood-forming organs, the spleen and lymphatics; the respi-

ratory, digestive, urinary, osseous, muscular, reproductive, and cutaneous systems.

Prerequisite: Pathology I

2 hours a week (Lect); fourth year, first semester, credit 2 units.

Total, 32 hours.

Veterinary Pathology 3; *LABORATORY DIAGNOSIS*.—Laboratory training in the examination of various secretions and excretions such as urine, saliva milk, etc.; pathological tissues and fluids; examination of skin scrapings for external parasites; feces for internal parasites, sero-diagnostic tests, etc.

Prerequisite: Pathology 1 and Parasitology 3.

4 hours a week (3 Lab, 1 Lect); fourth year, second semester . credit

2 units. Total, 64 hours.

AUTOPSIES 1 and 2.—In this course, students are trained in the technique of performing post-mortem examinations. Depending upon the size of the class, the students are arranged in groups of three or four. One student takes notes and the rest of the group are assigned to the different regions of the body. During the autopsy, the students are requested to describe and diagnose in a brief manner the pathological changes found in each organ dissected out. A summary of the lesions is made at the termination of the necropsy and the cause of death is then determined.

The students are required to submit a well-written protocol within two days after the necropsy. This is corrected and placed on file.

Prerequisite: Pathology I.

3 hours a week (Lab); fourth year, first semester, credit 1 unit.

Total, 48 hours.

3 hours a week (Lab); fourth year, second semester, credit 1 unit.

Total, 48 hours.

VETERINARY PARASITOLOGY

Assistant Professor DE JESUS

The courses are designed primarily to meet the needs of Veterinary practitioners, Government field veterinarians, and animal husbandmen, but they may also be useful to those who wish to take up parasitology as a special line of work. The lectures and laboratory instruction are supplemented by clinical observations and by practice in treating animals for parasites and parasitic diseases. Ample opportunity for the collection and preservation of parasitological material is afforded by the animals brought to the veterinary clinic as well as by the herds kept by the College of Agriculture.

Zoölogy 1; *GENERAL ZOOLOGY*.—This course is intended to be supplementary to the courses in veterinary anatomy and as an introduction to parasitology. It includes lectures, recitations, laboratory work

and field work on the morphology, physiology and classification of the various groups of animals.

Textbook: Hegner's College Zoölogy.

9 hours a week (6 Lab, 2 Lect, 1 Recit); first year first semester, credit 5 units. Total, 144 hours.

Parasitology 1; *VETERINARY ENTOMOLOGY*.—This course deals with the causation and transmission of diseases by insects and other arthropoids. Students are asked to collect and to identify specimens which are of importance in veterinary science and they are given demonstrations and actual practice in the destruction and eradication of the most injurious species.

Prerequisites: Zoölogy I and Pharmacology I.

4 hours a week (3 Lab, 1 lect); third year, first semester, credit 2 units. Total, 64 hours.

Parasitology 2; *VETERINARY HELMINTHOLOGY*.—This course deals with the parasitic worms of domesticated animals from the point of view of morphology, taxonomy, life history, pathogenicity, treatment and prophylaxis. The examination of fæces and urine for parasite ova is also included.

Prerequisites: Parasitology I and Pharmacology 2.

4 hours a week (3 Lab, 1 Lect); third year, second semester, credit 2 units. Total, 64 hours.

Parasitology 3; *VETERINARY PROTOZOOLOGY*.—This course is a continuation of Parasitology 2 and deals with the protozoan parasites of the domesticated animals.

Prerequisites: Parasitology 2 and Bacteriology 2.

hours a week (3 Lab, 1 Lect); fourth year, first semester, credit 2 units. Total, 64 hours.

VETERINARY SURGERY

Professor SAN AGUSTIN, Associate Professor SUMULONG,¹ Instructors DAVID¹ and VILLANUEVA

HORSE SHOEING.—Lectures, recitations, and demonstrations are devoted to the anatomy and physiology of the horse's foot, relationship of the foot to the rest of the limb, influence of the conformation over forms of hoofs, flight of feet, diseases of the foot, types of shoes, and the proper method of shoeing healthy and defective hoofs.

Prerequisite: Anatomy 4.

3 hours a week; third year second semester, credit 1 unit. Total 48 hours.

Veterinary Surgery 1; *GENERAL SURGERY*.—Lectures and recitations on the principles of surgery, with practical demonstrations in surgical

¹ From the Department of Anatomy.

² From the Department of Hygiene.

restraint, wound and fracture dressing, surgical bacteriology, bandaging, administration of anæsthetics, etc.

Prerequisites: Anatomy 4, Bacteriology 2 and Pathology 1 (1st semester).

3 hours a week (Lect); third year, second semester, credit 3 units.

Total, 48 hours.

Veterinary Surgery 2; *REGIONAL SURGERY*.—Lectures on surgical diseases of the horse, ox, and pig. Cases in the clinic are used for demonstration whenever available.

Prerequisite: Surgery I.

3 hours a week (Lect); fourth year, throughout the year, credit

6 units. Total, 48 hours.

Veterinary Surgery 3; *OPERATIVE SURGERY*.—Lectures and operative practice in which the important surgical operations are performed by the students on anæsthetized animals under the supervision of the instructor with special attention to surgical anatomy and technique.

Prerequisite: Surgery 1 and Surgery 2 (1st semester.)

5 hours a week (lab.); fourth year, first semester, credit 1 unit.

Total, 90 hours.

OBSTETRICS.—Lectures, recitations, and demonstrations on clinical cases. The course takes up the obstetric anatomy of domestic animals, physiology of reproduction, sterility, pre-parturient diseases, dystokia, and post-parturient diseases.

Prerequisites: Embryology Medicine 4 and Surgery 3.

3 hours a week (Lect); fourth year, second semester, credit 3 units.

Total, 48 hours.

SURGICAL CLINICS 1 and 3.—Cases are assigned to sections, composed of Senior student with Junior assistants, under the direct supervision of the instructor in charge. Students diagnose, assist in the necessary operations, and carry out the post-operative treatment. An out-patient clinic is part of the regular clinical instruction. Students accompanied by an instructor are required to visit patients in the surrounding country, make diagnosis and prescribe treatments under actual field conditions.

15 hours a week; first semester, credit 5 units. Total, 240 hours.

VETERINARY MEDICINE

Professors SAN AGUSTIN,¹ and GOMEZ,² and Instructor YUTUC (in charge) and VILLANUEVA³

The study of internal medicine begins after the students have acquired a thorough working knowledge of the fundamental studies, such as, anatomy, physiology, pathology, histology, bacteriology, materia medica and therapeutics. It extends over a period covering the last two years of

¹ From the Department of Surgery.

² From the Department of Pathology and Bacteriology.

³ From the Department of Hygiene.

undergraduate study, the subjects of the last year being distinct from, but complementary to, those of the preceding year.

The scope of the course is designed to cover up the manifestations, complications and sequelæ of, together with the application of protective and therapeutics agents, to the various diseased conditions of animals, which are brought about by their constitution, environment and utilization, by bacterial invasion, etc. It also aims to give a breadth and soundness of view in order to render the students in veterinary medicine a reliable and skillful veterinary pathologist, physician and sanitarian. Special emphasis is given to those conditions which are most prevalent in the Philippine Islands. The lectures and recitations are supplemented by the study of special cases as these are met with in the college and in the ambulatory clinics in order that the students may become thoroughly conversant with the causes, symptoms, diagnosis, prognosis and treatment of diseases.

CLINICAL DIAGNOSTICS.—The course consists of a systematic study of the methods of diagnosis and symptoms of diseases in all the various groups of organs. A practical application of the same is made on the various species of domestic animals.

Textbook: Malkamus, Clinical Diagnostics of the Internal Diseases of Domestic Animals. Translation.

Prerequisite: Anatomy 4.

3 hours a week (Lect); third year, first semester, credit 3 units.
Total, 48 hours.

Veterinary Medicine 1; *EXTERNAL DISEASES OF SMALL ANIMALS.*—This course deals principally with canine and feline diseases.

Textbook: Brumley, Diseases of Small Animals.

Prerequisite: Pharmacology I.

2 hours a week (Lect and Recit); third year, first semester, credit 2 units. Total, 32 hours.

Veterinary Medicine 2; *DISEASES OF THE RESPIRATORY, CIRCULATORY, AND DIGESTIVE SYSTEMS OF LARGE ANIMALS.*

Textbook: White, Principles and Practice of Veterinary Medicine.

Prerequisites: Medicine I and Pharmacology 2.

3 hours a week (Lect and Recit); third year, second semester, credit 3 units. Total, 48 hours.

Veterinary Medicine 3; *INTERNAL DISEASES OF SMALL ANIMALS.*

Prerequisite: Medicine 2.

2 hours a week (Lect and Recit); fourth year, first semester, credit 2 units. Total, 32 hours.

Veterinary Medicine 4; *DISEASES OF THE UROGENITAL ORGANS, NERVOUS SYSTEM, METABOLISM, BLOOD AND ORGANS OF LOCOMOTION OF LARGE DOMESTIC ANIMALS.*

Prerequisite: Medicine 2.

3 hours a week (Lect and Recit); fourth year, first semester, credit 3 units. Total, 48 hours.

Veterinary Medicine 5; INFECTIOUS DISEASES AND DIFFERENTIAL DIAGNOSIS OF LARGE DOMESTIC ANIMALS.

Textbook: Moore, Pathology and Differential Diagnosis of Infectious Disease of Animals.

Prerequisites: Medicine 3 and 4.

5 hours a week (Lect and Recit); fourth year, second semester, credit 5 units. Total, 190 hours.

MEDICAL CLINICS 2 and 4.—In this course students are given opportunity to diagnose, prescribe, and treat animal diseases that are presented to the clinics of the College under the direct supervision of the Professor in charge. Junior students act as assistants to their senior partners.

15 hours a week; second semester, credit 5 units. Total, 240 hours.

VETERINARY JURISPRUDENCE.—This course is given for the purpose of familiarizing the prospective graduate with the principles of veterinary ethics and the laws pertaining to the profession in the Philippine Islands, as well as the liabilities of the veterinarian and his professional compensation.

1 hour a week (Lect); fourth year, second semester, credit 1 unit.
Total, 16 hours.

Ambulatory Clinic.—Supplementary to the clinical instruction given to the senior students, the ambulatory clinic is conducted for the purpose of giving them clinical experience under field conditions. Practical surgical operations, such as, firing, castration, etc., are performed, and medicines are prescribed to medical cases.

The ambulatory clinic is also conducted in the form of an extension work among the farmers and livestock owners in the neighboring towns.

VETERINARY HYGIENE

Instructor VILLANUEVA (in charge)

Veterinary Hygiene 1; MILK INSPECTION.—This course includes the physical examination of dairy cattle and a consideration of the sanitary and hygienic necessities requisite to the production of clean milk. It is given as a supplement to the courses in Chemistry and Bacteriology where the chemical and bacteriological phases of this question are considered.

Prerequisites: Chemistry 3 and Bacteriology 2.

3 hours a week; third year, second semester, credit 1 unit. Total, 48 hours.

Veterinary Hygiene 2; MEAT INSPECTION.—This course consists of a study of the laws and rules governing the meat industry of the Philippines and a study of the methods used at the various slaughterhouses in and around Manila.

Prerequisites: Pathology 1 and Bacteriology 2.

1 hour a week (Lect); fourth year, first semester, credit 1 unit.
Total, 16 hours.

Veterinary Hygiene 3; PREVENTIVE MEDICINE.—This course embraces the measures applicable in the prevention of infectious diseases of animals; special consideration being given to the methods of quarantine, disinfection, hygiene, and sanitation of animal habitations.

Prerequisites: Bacteriology 2 and Pathology 2.

1 hour a week (Lect); fourth year, second semester, credit 1 unit.

Total, 16 hours.

RECIPROCAL COURSES OF THE COLLEGE OF VETERINARY SCIENCE AND THE COLLEGE OF AGRICULTURE

CHEMISTRY

Agricultural Chemistry 1; GENERAL CHEMISTRY.—The course comprises a thorough study of the fundamental principles of general chemistry with a very brief study of organic chemistry and some qualitative analysis. The course requires two lectures, one recitation, and six hours of laboratory work weekly. Required in all curricula and in the College of Veterinary Science and School of Forestry.

Prerequisite: High School Physics or Physics 1.

Throughout the year, credit 10 units. Total, 320 hours.

Agricultural Chemistry 3; COMPOUNDS OF CARBON.—This course covers the preparation, properties, and structure of typical organic compounds and includes a discussion of theories of reactions in their bearing on the formation of these compounds. The course requires three lectures and six hours of laboratory work weekly. Required in the Sugar Technology Curriculum and in the College of Veterinary Science and School of Forestry. Prerequisite: Chemistry 1.

Throughout the year, credit 10 units. Total, 320 hours.

ANIMAL HUSBANDRY

Animal Husbandry 1; GENERAL PRINCIPLES OF ANIMAL HUSBANDRY.—A study of the fundamental principles of animal husbandry in its different phases. Three lectures a week. Required in all curricula.

Second semester, credit 3 units. Total, 48 hours.

Animal Husbandry 2; LIVE STOCK JUDGING AND MANAGEMENT.—Selection, care, and management of farm animals. Six hours of laboratory work weekly. Required in all curricula.

Throughout the year, credit 4 units. Total, 192 hours.

Animal Husbandry 3; PRINCIPLES OF ANIMAL NUTRITION.—The preparation of feeds, the computation of rations, and methods of feeding for economical production. Special emphasis is given to the consideration of the nutritive value of Philippine feeds. Text: HENRY and MORRISON—*Feeds and Feedings* (Abridged). Three lectures or recitations weekly. Elective.

Prerequisites: Animal Husbandry 1 and 2.

First semester, credit 3 units. Total, 48 hours.

Animal Husbandry 4; ANIMAL BREEDING.—This course deals with principles of constructive breeding. It is conducted through lectures.

Required in Animal Husbandry Curricula and in the College of Veterinary Science

Prerequisite: Animal Husbandry 2.

3 hours a week (Lect); second semester, credit 3 units. Total, 48 hours.

Veterinary Anatomy 6; *ELEMENTARY ANATOMY*.—This course is designed to meet the needs of the Agricultural students taking animal husbandry.

It includes in a general way the anatomy of domestic farm animals with the object of giving the students a proper understanding of conformation, the various levers of locomotion, and the digestive and respiratory systems.

Laboratory work consists of studying and drawing the most important bones and other parts of the body as the instructor may indicate. Demonstration of previously dissected part of the body will be given from time to time. Required of Animal Husbandry students.

9 hours a week (6 Lab, 3 Lect); first semester, credit 5 units. Total, 144 hours.

Veterinary Medicine 6; *COMMON DISEASES OF ANIMALS*.—Instruction in animal diseases to Animal Husbandry students of the College of Agriculture is mainly limited to first aid measures, with proper emphasis on sanitation and hygiene, and function of the veterinarian in the treatment and control work. It embraces also a brief consideration of the common diseases of horses, cattle, poultry, swine, sheep, and goats. Similarly, the diagnosis and treatment of some common ailments and minor surgical operations are given attention.

Prerequisite: Vet. Anatomy 6.

Textbook: Hadley, Principles of Veterinary Science.

3 hours a week (Lect); second semester, credit 3 units. Total, 48 hours.

BOTANY

Plant Physiology 3; *VETERINARY BOTANY*.—This course is essentially a study of plants of economic importance from the view point of the veterinarian. Fodder, medicinal, and poisonous plants receive particular attention. In the laboratory work fresh and herbarium specimens are examined and the students are trained to run out the identity of the unknown plants and to perform qualitative chemical tests on suspected poisonous species. The course requires two lecture hours weekly.

Second semester, credit 2 units. Total, 32 hours.

BACTERIOLOGY

Bacteriology 1; *GENERAL BACTERIOLOGY*.—This course includes a study of the structure, classification, and life processes of nonpathogenic bacteria. Lectures, quizzes, and laboratory work are designed to teach the student methods of cleaning and sterilizing glassware, methods of preparing culture media, isolation of pure cultures, staining bacteria, and detecting the products of their growth. A study of the bacteriology of milk and water is included in the course.

8 hours a week (6 Lab, 2 Lect); first semester, credit 4 units. Total, 128 hours.

THE SIX-YEAR COMBINED ANIMAL HUSBANDRY AND
VETERINARY CURRICULUM

For detailed information regarding the course, see curriculum of the College of Agriculture.

THE FOUR-YEAR CURRICULUM IN VETERINARY SCIENCE

Leads to the degree of Doctor of Veterinary Medicine (D.V.M.). Open to graduates of approved four-year secondary schools

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AChem 1	9	5	AChem 1	9	5
VZool 1	9	5	VHstl	8	4
VAnat 1	11	5	VAnat 2	14	6
VEmbr	5	3	VBot	2	2
Milit Sc 1	3	1½	AHusb 1	3	3
Phys Ed 1 and 2	1	2	Milit Sc 1	3	1½
			Phys Ed 1 and 2	1	2
Totals	38	19½	Totals	40	21½

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
AChem 3	9	5	AChem 3	9	5
VAnat 3	11	5	VAnat 4	8	4
VBact 1	8	4	VBact 2	8	4
AHusb 2	6	2	VPhs 1	4	2
VPhs 1	5	3	VPhar 1	5	3
Milit Sc 2	3	1½	AHusb 2	6	2
Phys Ed 3	1	1	Milit Sc 2	3	1½
			Phys Ed 3	1	1
Totals	43	21½	Totals	44	22½

THIRD YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
VPhar 2	6	4	AHusb 4	3	3
VMed 1	2	2	VMed 2	3	3
VPath 1	8	4	VPath 1	4	2
VClin Diag	3	3	VSurg 1	3	3
VParasit 1	4	2	VParasit 2	4	2
AHusb 3	3	3	HShoe	3	1
VClin 1	9	3	VHyg 1	3	1
Phys Ed 4	1	1	V Clin 2	15	5
			Phy. Ed. 4	1	1
Totals	36	22	Totals	39	21

FOURTH YEAR

First Semester

	Hours	Units
VHyg 2	1	1
VSurg 2	3	3
VPath 2	2	2
VMed 3	2	2
VMed 4	3	3
VParasit 3	4	2
VSurg 3	5	1
VAutop 1	3	1
VClin 3	15	5
Totals	38	20

Second Semester

	Hours	Units
VJur	1	1
VHyg 3	1	1
VSurg 2	3	3
VMed 5	5	5
VObst	3	3
VPath 3	4	2
VAutop 2	3	1
VClin 4	15	5
Totals	36	21

The School of Forestry

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA

Dean, School of Forestry: Prof. ARTHUR F. FISCHER

In Charge of the School of Forestry: Prof. HAROLD CUZNER

BUSINESS DIRECTORY

*Address all correspondence to the School of Forestry,
Agricultural College, Laguna.*

FACULTY OF INSTRUCTION

- ARTHUR F. FISCHER, C.E., M.F.,
Dean and Professor of Tropical Forestry.
- HAROLD CUZNER, B.S.F.,
Forester in Charge; Professor of Silviculture and Physiography.
- H. M. CURRAN, B.S., F.E.,
Professor of Tropical Forestry.
- ANTONIO P. RACELIS, B.S.F., M.S.F.,
Associate Professor of Forest Engineering.
- CARLOS SULIT, M.F.,
Associate Professor of Forest Management.
- ANNE MILTIMORE PENDLETON,
Assistant Professor of English.
- ALEJANDRO DE MESA, M.F.,
Assistant Professor of Forest Entomology and Pathology.
- FELIPE M. SALVOZA, B.S.F., M.S., Sc.D.,
Instructor in Dendrology.
- QUINTIN GELLIDON, B.S.C.E.,
Instructor in Surveying.
- JOSE B. BLANDO, A.B.,
Instructor in English and Spanish.
- MAMERTO D. SULIT, Graduate Ranger,
Assistant in Dendrology.
- JUSTINO SEGUERRA, Graduate Ranger,
Assistant in Mathematics.
- TEODORO DELIZO, Graduate Ranger,
Assistant in Silviculture.
- RICARDO BUHAY, Graduate Ranger,
Assistant in Wood Technology.

LECTURERS

- LUIS J. REYES, B.S.,
Professorial Lecturer on Wood Technology.
- CALIXTO MABESA, B.S., M.F.,
Lecturer on Wood Technology.

THE SCHOOL OF FORESTRY

HISTORY

A few years after the creation of the Bureau of Forestry under the American regime, urgent need was felt for technically trained forest rangers. To fill this need, the Philippine Legislature in April, 1910, passed an act authorizing the Director of Forestry to appoint twenty forestry pensionados, and to construct temporary buildings for their use. This act marked the beginning of the Forest School, which was first opened in June, 1910. Subsequently, in response to the increased demands for admission to the Forest School the Legislature added to the number of forestry pensionados. Each year, since 1912, the Forest School has graduated classes of about twenty men all of whom have received appointments as rangers in the Bureau of Forestry.

Until April 1, 1916, the Forest School was under the College of Agriculture. On February 4, 1916, an act, No. 2578, was passed creating a school in the University of the Philippines to be known as the Forest School, which should embrace all work hitherto carried on in the Forest School of the College of Agriculture of the University of the Philippines.

In 1921, the course leading to the degree of Bachelor of Science in Forestry was provided for, and has occasionally been taken advantage of since the beginning of the first semester of the school year 1922-23. In March, 1930, with the approval of the University Council, the curriculum was revised. The two-year Ranger's course was abolished and in its place was offered, beginning from June, 1930, a four-year course leading to the degree of Bachelor of Science in Forestry.

This course is so arranged that a student finishing the first year is fitted for work as a forest guard. If the first two years are finished under the conditions stipulated in the course of study he may be given a certificate as Ranger. On completion of the four years the degree of Bachelor of Science in Forestry (B.S.F.) is granted.

GENERAL INFORMATION

LOCATION

The Forest School, adjoining the Colleges of Agriculture and Veterinary Science, is located within the Makiling National Botanic Garden, about five kilometers from Los Baños, Laguna Province.

The post office address is Agricultural College, Laguna, but the railroad station is known as "College".

A regular bus service whose terminals are School of Forestry and the town of Los Baños passes thru the Colleges of Agriculture and Veterinary Science, Barrio San Antonio and College R. R. Station. The fare is ₱0.15 per person from the School of Forestry to Los Baños and ₱0.10 to the other points.

EQUIPMENT AND FACILITIES FOR INSTRUCTION

The Forest School, itself, is a commodious concrete building. On the Forestry Campus are student quarters, consisting of six strong material houses, 5 dormitories and a mess hall. In addition, the offices and facilities of the Division of Forest Investigation of the Bureau of Forestry are also available. These are all located within the Makiling National Botanic Garden, which contains an area of about 4,000 hectares, is traversed by numerous trails leading to the school. Thus, the forest is a huge laboratory where botany, silviculture and other forestry subjects can be studied under the different conditions found on the mountain. There are nearly sixty hectares of plantations of native and exotic forest trees of economic importance. On more than twenty hectares of these are trees large enough to be of value in the study of silviculture and mensuration. The school is provided with such laboratory and field equipment as microscopes, surveying and drafting instruments, and lumbering implements. During the summer, field work in different forest and logging operations is carried on. Each year students in lumbering visit the nearby sawmills where they observe and study modern methods of logging and sawmilling.

For the use of students, faculty and personnel, there is a School Library of forestry and other technical works, besides more than one hundred volumes of fiction which later were donated by Mr. Arthur F. Fischer, Director of Forestry. The forestry students also have access to the Library of the Bureau of Forestry and the Philippine Public Library in Manila, and to the College of Agriculture Library in Los Baños.

REQUIREMENTS FOR ADMISSION

Candidates for admission to the School of Forestry must be graduates of high schools or of institutions of similar standing recognized by the government. Graduates of Agricultural High Schools of the Muñoz type may be admitted provided they have previously taken at least two years of high school mathematics (Algebra and Geometry). Holders of Ranger's Certificate may be admitted as third year students but they must take up such subjects given in the new curriculum in the first and second years as they have not had under the old curriculum.

Special students, not candidates for degrees, may be allowed to take any special subject for which they have the necessary background.

Applications for admission must pass a medical examination satisfactory to the College Physician and must be present in person during the period of registration.

Application for advanced credits must be submitted to the Dean of the School of Forestry for approval.

In case the number of applicants exceeds the capacity of the school, the Dean may require the applicants to take an entrance examination at the school during the last week in May, which examination shall cover English, Mathematics, general science and other subjects taken in the High School. The results of the examination will be announced before registration in June.

SCHOLARSHIPS

A limited number of scholarships is awarded each year to those students having the highest scholastics record. The scholastic standing is based upon the grades obtained from the previous semester and new awards are made each semester. To be eligible for scholarship a student must be regularly enrolled, and must carry a load of not less than the number of units required for the semester. He shall be a citizen of the Philippine Islands; shall have no semestral grade lower than 80% in any one subject and a total average of not lower than 85%. From those eligible the students having the highest grades will be selected. Leadership, personality and general conduct will also be taken into consideration.

OPPORTUNITIES FOR GRADUATES

The demand has been growing, both in government and private service, for men technically trained in forestry. Graduates of both Degree and Ranger Courses of the school are now serving the Bureau of Forestry, lumber companies and the Forest Department of such other countries as Borneo, China and Guam. Of the 463 graduates of the Forest School, approximately 300 are in the Philippine Forest Service while about 50 are employed in the several lumber companies of this country and in other private firms. Twenty-two are serving in foreign countries, and only a very small number has left the forest service for other kinds of work.

NECESSARY PERSONAL EQUIPMENT

Every student should come provided with a cot, mosquito nets, one good bolo, working shoes and clothes, such books as Arithmetic, a dictionary, English, Economics and other high school text and reference books. Students should bring their current cedula with them.

EMPLOYMENT

The School of Forestry has a limited fund for the employment of student-laborers at from ₱0.10 to ₱0.15 per hour. Only such students as can prove that they are really self-supporting, and who maintain a high degree of scholastic record, are given employment. The School of Forestry does not guarantee employment to any student.

STUDENT ACTIVITIES AND LIVING CONDITIONS

While the school is not a military institution, such adherence to rules and regulations as are conducive to discipline, good work and sanitation is required.

Through the organization known as the "Philippine Forestry Club" the students manage their own affairs. Once a month this club holds regular meetings of a business, literary or social nature. Through the generosity of Mrs. W. F. Sherfese, the wife of the former Director of the Bureau of Forestry, a Radio-phonograph has been installed at the Mess Hall. On the campus are volley-ball, basket-ball, and tennis courts. At any time the athletic field of the College of Agriculture is available to Forestry Students.

The U.P. Los Baños Infirmary, a Y.M.C.A. building, a Protestant Chapel and a Roman Catholic Church are situated about a kilometer from the Forestry Campus. Every Friday night the "Cine Makiling" gives the latest "talkie hits".

FEES AND LIVING EXPENSES

Average expenses of a student, including board, lodging and laundry, range from ₱20.00 to ₱25.00 a month.

A mess, managed by the students of the School of Forestry offers board which must be paid in advance, at from ₱12.00 to ₱15.00 a month. At present the School of Forestry makes no charge for quarters and light and accommodations are available for a limited number of students. Students who cannot be accommodated on the campus look for quarters elsewhere.

Expenses for books and trips vary from ₱20.00 to ₱30.00 a year.

Textbooks, hand lenses and other school supplies and equipment may be bought at the students' cooperative store located on the Campus.

UNIFORMS FOR STUDENTS IN THE SCHOOL OF FORESTRY

1. Shirts—white cotton.
2. Pants—khaki.
3. Tie, shoes and hat—optional.

Students are required to wear military uniforms during the drill. These uniforms cost approximately ₱18.00, and may be worn in the classroom as well as during drill.

For field work, suitable working clothes should be worn.

The following are the fees and deposits required. These are, however, subject to change:

FIRST YEAR

Entrance fee	₱5.00	Payable only once.
Library fee	2.50	Per semester.
Medical fee	2.00	" "
Athletic fee	1.50	" "
U. P. Students council fee ...	.50	" "
Student body fee	1.00	" "
Deposit to the University(1) ..	10.00	Payable only once.
Mess deposit(2)	20.00	" "

Total ₱42.50

SECOND YEAR

Library fee	₱2.50	Per semester.
Medical fee	2.00	" "
Athletic fee	1.50	" "
U. P. Student council fee ....	.50	" "
Student body fee	1.00	" "
Mess deposit(2)	20.00	Payable only once.

Total ₱27.50

THIRD YEAR

Registration fee	₱5.00	Per semester.
Library fee	2.50	" "
Medical fee	2.00	" "
Athletic fee	1.50	" "
U. P. Student council fee ....	.50	" "
Student body fee	1.00	" "
Tuition fee	15.00	" "
Mess deposit ⁽²⁾	20.00	Payable only once.

Total₱47.50

FOURTH YEAR

Registration fee	₱5.00	Per semester.
Library fee	2.50	" "
Medical fee	2.00	" "
Athletic fee	1.50	" "
U. P. Student council fee ....	.50	" "
Student body fee	1.00	" "
Tuition fee	15.00	" "
Diploma fee	25.00	Payable only once.
Alumni fee	6.00	" "
Mess deposit ⁽²⁾	20.00	

Total₱78.50

(1) The deposit of ₱10.00 will be returned to the student upon his separation from the school.

(2) The mess deposit of ₱20.00 may be withdrawn by the student upon leaving school or when he goes home for vacation after the school year.

No deposit will be refunded until the student has his clearance papers for all money and property responsibilities.

Holders of Ranger Certificates, desiring to register for the Degree Course, are classified as Juniors, and should pay the fees required for the Junior year, and, in addition, the entrance fee of ₱5.00 and the University deposit of ₱10.00.

All students entering the Forest School are cautioned against undertaking the course in forestry without the necessary and sufficient means with which to finish their work while in the school.

For further information write to the Dean, School of Forestry, Agricultural College, Laguna.

SCHEDULE OF COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY

1. Requirement for admission: High School graduate.
2. Requirements for graduation: 155 hours exclusive of summer work, physical education, and military science.
3. Description of courses:

THE SCHOOL OF FORESTRY

FIRST YEAR

<i>1st Semester</i>	<i>Credits</i>	<i>2nd Semester</i>	<i>Credits</i>
General Botany	3	General Botany	3
English I	4	English I	4
Mathematics I	4	F. Engr. I (Surv. & Map- ping)	4
Dendrology I	4	Dendrology I	4
Forestry I (Elements)	2	Economics I (Principles) ..	2
Woodcraft & First Aid	2	F. Mensuration	3
Military Science	+1½	Military Science	+1½
<hr/>		<hr/>	
19+1½		20+1½	

SUMMER—To be spent on a permanent camp. Timber estimating and map making. Required.

SECOND YEAR

<i>1st Semester</i>	<i>Credits</i>	<i>2nd Semester</i>	<i>Credits</i>
Wood Tech. I	5	Wood Tech. II	3
Administration	3	Administration	3
F. Physiography	3	Physics	5
Silviculture I	3	Silviculture II	3
F. Engineering II	3	Lumbering I (Log. & Lbr.) ..	3
Spanish I	3	Spanish I	3
Military Science	+1½	Military Science	+1½
<hr/>		<hr/>	
20+1½		20+1½	

(Students completing the regular 4-year course without interruption should take Forest Pathology and Forest Entomology during the second year and Forest Administration during the fourth year.)

SUMMER—Field experience in some line of forestry work either in the government service or in lumber companies.

THIRD YEAR

<i>1st Semester</i>	<i>Credits</i>	<i>2nd Semester</i>	<i>Credits</i>
Chemistry Ia	5	Chemistry Ib	5
Economics II (F. Economics)	2	F. Policy & History	2
Wood Tech. III	3	Forest Protection	2
Silviculture III	3	Management II	3
Foreign Language	3	Foreign Language	3
Soil Technology	3	Forest Products	3
<hr/>		Elective	2
<hr/>		<hr/>	
19		20	

SUMMER—Logging, Engineering, Sawmilling or other forestry work.

Required: At least 10 hours credit.

FOURTH YEAR

<i>1st Semester</i>	<i>Credits</i>	<i>2nd Semester</i>	<i>Credits</i>
Management III (F. Valuation & Finance)	2	Management IV (Org. & Working Plans)	3
Pathology I (F. Pathology)	3	Entom. I (F. Entomology)	3
Lumbering II (The Lumber Industry)	3	Seminar	2
Foreign Language	5	Elective	10
Seminar	2		
Elective	4		
	<hr/> 19		<hr/> 18

SUGGESTED ELECTIVES

<i>1st Semester</i>	<i>Credits</i>	<i>2nd Semester</i>	<i>Credits</i>
Organic Chemistry (2 semesters)	10	Zoölogy	5
Soils	3-5	Ecology	2
Grazing	3	Geology	3
Business Law	3	Rural Economics	4
Arboriculture	2	Accounting	5
Advanced Surveying			

In case of students specializing in certain branches of forestry the faculty is authorized to permit the substitution for subjects in the general Forestry course, such subjects given in the College of Agriculture, as will best fit the student for the work he is to undertake provided that the number of credits earned must in all cases be not less than the number called for in the course as at present authorized.

(U.P. Gen. Catalogue, 1929-30, p. 466).

DESCRIPTION OF COURSES LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY

BOTANY 1: General Botany.—Laboratory work, lectures and recitations covering the essentials of elementary botany, including the morphology and physiology of the seed plants as well as the classification and distribution of the flowering plants.

Particular attention is given to the arborescent flora.

Five hours a week (4 lab. & 1 lect.); 6 units—1st and 2nd semesters.

ECOLOGY.—A course in plant geography to include the study of plant formations and the factors which are responsible for the distribution of the different types of vegetation. Special attention is given to the various forest types and associations.

2 units.

DENDROLOGY 1: Dendrology.—This course consists of a study of the woody vegetation occurring on Mount Makiling. Its object is to enable the

student to identify timber trees quickly and accurately by means of morphological characters. The lectures cover such subjects as local and general distribution of the species, their relative abundance and minor products for which they are valuable.

Six hours a week (4 lab. & 2 lect.); 8 units—1st and 2nd semesters.

PHYSIOGRAPHY 1: Forest Physiography.—The course as outlined is designed to give the student an understanding of the factors influencing the distribution of vegetative types. It covers soil formation, climatic and topographic features together with the agents which bring about their modification.

Three hours a week; 3 units—1st semester.

SOIL TECHNOLOGY.—The soil from the point of view of one of the environmental factors for plants; the weathering of soil materials; fundamental differences between tropical and temperate zone weatherings; mineral matter; organic matter. Structure, aeration; water relations of soil and plant, drainage. Soil erosion—extent, seriousness, control, prevention, chemical analysis of soils; soil solution; leaching losses; alkali soils. Soil colloids, nature, importance. Soil survey, classification, and mapping; methods and uses. Reaction of soils, acidity and plants. Soil organisms; organic matter transformations; nitrogen changes control of soil conditions in forests.

3 units—1st semester.

SOILS.—Arrangement will be made for students desiring further work in soils to take up courses in the College of Agriculture which may be best adapted to his particular needs.

3 to 5 units.

MATHEMATICS 1: Trigonometry.—This course covers plane trigonometry, laying special stress on problems arising in connection with surveying, logging engineering, etc.

4 units—1st semester.

PHYSICS.—The course in Physics stresses on mechanics, hydraulics and heat with particular emphasis on their application to machinery and appliances used in logging and lumbering.

A thorough training is given in the solution of problems and the development of formulas.

5 units—2nd semester.

ACCOUNTING.—Theory and practice of accounting with special reference to the need of the Lumber Industry.

5 units.

MANAGEMENT 1: Forest Mensuration.—Determination of the contents of logs, trees and stands. Construction and use of volume tables and log rules. Principles of timber estimating, scaling, grading and tree measurements.

Five hours per week (3 lab. & 2 lect.); 3 units—2nd semester.

MANAGEMENT II: Advanced Mensuration.—Principles of growth and methods of obtaining the growth of trees and stands; construction of yield and growth tables and establishment of sample plots. Principles of commercial timber estimating for a big tract of forests are given.

3 units—2nd semester.

MANAGEMENT III: Forest Finance.—Simple and compound interest formulas used in the financial calculations in connection with forest investments; determination of income, profit and loss. Principles underlying the study of costs, market and sale values and appraisal of damage to forest property.

2 units—1st semester.

MANAGEMENT IV: Organization and Working Plans.—Lectures on the principles of forest management, organization of forest property, determination of cut, rotation, increment and growing stock. Division and allotment of areas for sustained yield. Collection of data and preparation of a working plan for a definite tract of timber.

3 units—2nd semester.

FOREST ENGINEERING I: Elementary Surveying.—Instruction is given in map making, pacing, chaining, compass work, leveling, and the taking of field notes.

Six hours per week (4 lab. & 2 recitations).

4 units—2nd semester.

FOREST ENGINEERING II: Construction and Improvement.—An elementary course in the principles and practice involved in the construction and maintenance of trails, roads, skid roads, bridges, forest and logging camps and other administrative and protective improvements. Lecture and field work.

3 units—1st semester.

CHEMISTRY I (A Chem. 1): General Chemistry.—A thorough study of the fundamental principles of general chemistry with a brief study of organic chemistry and some qualitative analysis. Nine hours per week (6 lab. & 3 lect.).

10 units—Both semesters.

CHEMISTRY II (A Chem. 3): Compounds of Carbon.—Preparation, properties, and structure of typical organic compounds, and includes a discussion of theories of reaction in their bearing on the formation of those compounds. Nine hours per week (6 lab. & 3 lect.).

10 units— Both semesters.

ECONOMICS I: Principles of Economics.—A general introduction to the study of political economy in order to give the student a background for Forest Economics, Forest Utilization and Forest Management.

Two hours per week; 2 units—2nd semester.

ECONOMICS II: Forest Economics.—A study of forest problems, conditions and influence from an economic standpoint, with special reference to the tropics.

Two hours per week; 2 units—1st semester.

ECONOMICS III (Rural Economics): Economic Conditions of the Philippines.—Land, labor and capital conditions of the Philippine Islands and the production of Philippine Agricultural raw materials, their value, internal movement, and industrial elaboration.

4 units—Throughout the year.

FOREST POLICY AND HISTORY.—The relation and attitude of the government to forestry, both public and private. The forest policy of the

FOREST PROTECTION.—The protection of the forests against animate

Two hours per week; 2 units—2nd semester.

United States, European countries, and tropical countries with special reference to the Orient. Development of a Philippine forest policy.

and inanimate enemies such as fire, climatic agencies, landslides, insects, fungi, animals, and man.

Two hours per week; 2 units—2nd semester.

LUMBERING I: Logging and Lumbering.—This course includes discussions of all operations in logging and sawmilling, such as felling, yarding, transporting, loading and unloading, sawing, edging, trimming and sorting. Sale and marketing of lumber. Comparison of animal and power logging with special reference to the tropics.

3 units—2nd semester.

LUMBERING II: Lumber Industry.—The economics of lumber industry, including the factors to be considered in the organization of logging operations, sawmilling, marketing and distribution of rough and finished lumber. Production; consumption; lumber prices and foreign trade in lumber are discussed.

3 units—1st semester.

WOOD TECHNOLOGY I: Wood Identification.—A general consideration of the families and genera of trees in the tropics, giving special attention to those of economic importance in the Indo-Malayan region and their identification with the aid of a pocket knife and hand lens.

Ten hours per week (8 lab. and 2 lect.); 5 units—1st semester.

WOOD TECHNOLOGY II: Timber Physics.—A study of the mechanical properties of wood including strength, softness, toughness, etc., together with the factors which modify them.

Five hours per week (4 lab. and 1 lect.); 3 units—2nd semester.

WOOD TECHNOLOGY III: Wood Preservation.—The causes of decay in wood and their determination including the theory and control. General methods of preservation, seasoning and storing.

Three hours a week (lecture and recitation); 3 units—1st semester.

SILVICULTURE I: Nursery Practice.—Location and establishment of forest nurseries; the collection, identification and care of seeds; the planting of seeds and cuttings and the care of nursery stock.

Five hours per week (4 lab. and 1 lect.); 3 units—1st semester.

SILVICULTURE II: Seeding and Planting.—The transplanting of nursery stocks to the field. Methods of handling, packing, transporting and setting of seedlings. Spot planting and the care of newly planted areas. This course will also include work in pruning.

Five hours per week (4 lab. and 1 lect.); 3 units—2nd semester.

SILVICULTURE III: Silvics and Practice of Silviculture.—A series of lectures on the foundations of silviculture followed by a discussion of the different silvicultural methods with special reference to their application in the tropics; also improvement cuttings and thinnings.

Three hours per week; 3 units—1st semester.

ARBORICULTURE.—The handling of tree crops intended for purposes other than the production of timber. This course includes pruning, tree surgery, transplanting large and small trees as well as their care and management.

Planting of road and street trees, farm woodlots and windbreak are given careful consideration.

2 units.

GRAZING.—General discussions of the animal industry including law, consumption, production and importation of animals both for meat and for work. Ranch and pasture management, including its improvement and the study of important forage and plants poisonous to animals. Delimitation of pasture lands from forest lands. Grazing and its effect on forest management and specific areas adapted to pasture and grazing are discussed.

3 units.

ZOOLOGY (Zoöl. 1-a): Introductory Economic Zoölogy.—An introduction to animal biology intended to give the student a general view of the fundamental principles of zoölogy and to prepare them for advanced work in related sciences. It is based on a study of the various biological principles, as related to Zoölogy, life history, morphological characters and relationships of the representatives of the more important animal phyla.

5 units.

ENTOMOLOGY I: Forest Entomology.—An elementary study in general entomology designed to bring out the economic side of the subject, considerable attention is paid to the recognition of important insect pests of trees and timber and the methods of controlling them.

3 units—2nd semester.

PATHOLOGY I: Forest Pathology.—The course includes a study of the more important tree diseases and timber rots found in the Philippines; the conditions under which they develop and their control.

3 units—1st semester.

FORESTRY I: Elements of Forestry.—This is a general course designed to give the student a general view of the field of forestry, its aims and importance in order that he may have a better understanding of the application and relation of the more detailed subjects.

Two hours; 2 units—1st semester.

WOODCRAFT AND FIRST AID.—It is the object of this course to provide the student with a general knowledge of camp location, camp sanitation, pitching tents, erection of temporary shelter and calculation of supplies needed for parties of various sizes as well as give training in knot tying, splicing, first aid. etc.

Two hours per week; 2 units—1st semester.

FOREST ADMINISTRATION: Laws and Procedure.—A study of the manual of procedure; forest regulations and laws, including those of internal revenue and bureau of lands. Opinions and decisions of the courts and of the Attorney-General concerning forests and forest lands are carefully reviewed.

3 units per semester—Both semesters.

BUSINESS LAW.—Laws relating to contracts, partnerships, companies, corporations, land titles and such questions as may come up in ordinary business transactions.

3 units.

ENGLISH 1: The purpose of this course is to give the student a more ready and accurate use of written and spoken English. Particular attention is given to the writing of reports, letters and short articles on technical subjects. Emphasis is also laid on clear enunciation.

Four hours per week; 4 units per semester—Both semesters.

SPANISH 1: Elementary Spanish.—Spanish grammar and composition supplemented by reading and conversation.

Three hours per week; 3 units per semester—Both semesters.

FOREIGN LANGUAGE.—The student may select either of the languages taught at the College of Agriculture—German, Dutch, or French—which will be most useful to him. Whichever language is selected must be carried through two years.

6 units (first year) 5 units (second year).

The Northern Luzon Junior College

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Dean of the College: Dr. AGUSTIN S. ALONZO.

Secretary-Registrar: Dr. VEDASTO J. SAMONTE.

Dean of Women: Mrs. LEONA JARAMILLO.

Collecting-Disbursing-Property Officer: Mr. FRANCISCO DEL CARMEN.

Assistant Physical Director: Mr. FORTUNATO ROQUE.

Librarian: Mr. PERFECTO S. SISON.

CHAIRMEN OF STANDING COMMITTEES

Admission: Dr. VEDASTO J. SAMONTE.

Athletics: Mr. FORTUNATO ROQUE.

Buildings and Grounds: Mr. MOISES M. KALAW.

Curriculum: Mr. EULOGIO ESTAMPADOR.

Library: Mrs. LEONA JARAMILLO.

Publication: Mr. AUGUSTO C. CATANJAL.

Schedule: Dr. TRINIDAD JARAMILLO.

Scholarship: Dr. VEDASTO J. SAMONTE.

Student Organizations and Activities: Dr. VEDASTO J. SAMONTE.

Student Welfare: Mr. JOSE B. MACAPIA.

BUSINESS DIRECTORY

OFFICE OF THE DEAN: The Office of the Dean is located on the first floor of the Main Building, Vigan, Ilocos Sur.

CORRESPONDENCE: Address all correspondence to the Dean, The Northern Luzon Junior College, Vigan, Ilocos Sur.

FACULTY OF INSTRUCTION

AGUSTIN S. ALONZO, M.A., Ph.D.

Dean and Associate Professor of Education and Psychology

VEDASTO J. SAMONTE, A.M., Ph.D.

Assistant Professor of Political Science and Sociology

EULOGIO ESTAMPADOR, M.S.

Instructor in Zoölogy

LEONA JARAMILLO, Ph.B.

Instructor in English

TRINIDAD JARAMILLO, M.S., Ph.D.

Instructor in Mathematics and Physics

VICENTE ENCARNACION, LL.B., A.B., Lit. M.

Instructor in French and Spanish

MOISES M. KALAW, B.S.Agr.

Instructor in Botany

JOSE B. MACAPIA, Ph.B.

Instructor in History

FORTUNATO ROQUE

Instructor in Physical Education

AUGUSTO C. CATANJAL, Ph.B. M.A.

Instructor in English

ADELAIDA T. ORETA, Ph.G., B.S., M.S.

Instructor in Chemistry

ENGRACIO D. GUERZON, A.B., M.A.

Instructor in Economics

THE NORTHERN LUZON JUNIOR COLLEGE

ESTABLISHMENT

In accordance with Act No. 3667 of the Philippine Legislature and by virtue of a resolution adopted by the Board of Regents on January 9, 1930, the Northern Luzon Junior College was established in Vigan, Ilocos Sur, in June, 1930, as a branch of the University of the Philippines.

The Northern Luzon Junior College is housed in the old Provincial High School Building, affording the necessary class rooms, laboratories, office rooms and library. It has an armory gymnasium constructed on the same block where the main building is located. It enables the Physical Education Department to hold its gymnastic classes or calisthenics, rain or shine without interfering with the classes in session in the main building. A green house is located between the gymnasium and the main building. Here are kept plants collected by Botany classes scientifically classified. In this green house is constructed an aquarium where different varieties of fish are taken care of for scientific studies of pupils in Zoölogy classes.

COURSES OFFERED

This College is authorized to offer courses leading to the title of Associate in Arts (A.A.) conferred upon the completion of:

Commerce, 2 years; Education, 2 years; General, 2 years; Pre-Law, 2 years; and Pre-Medic, 2 years.

ADMISSION

Candidates for admission to the Northern Luzon Junior College must be graduates of a four-year standard high school recognized by the Secretary of Public Instruction. They are also required to take the Type A entrance examination.

ENTRANCE DEFICIENCY

Students deficient in any of the subjects required for admission who may, in spite of such deficiencies, be admitted to any college by the faculty concerned, must make up all deficiencies within one year.

ENTRANCE EXAMINATIONS

Besides graduation from a four-year high school, students intending to matriculate in The Northern Luzon Junior College are required to take the Type A examination. This examination consists of the following subjects:

English and Composition	200
Mathematics	100
History	100
Physics	100
Biology	100
Intelligence Test	100

Total 700

Students intending to matriculate in The Northern Luzon Junior College but fail in the entrance test in Mathematics are required to take and pass Mathematics A if they intend to take further work in Mathematics. Those who fail but do not intend to take further work in Mathematics are required to remove this deficiency within one year either by passing the examination in Mathematics A at the end of each semester during the regular examination week or by taking and passing Mathematics A as given in this University.

Students who fail in the entrance test in Physics must take and pass Physics A before they can be admitted to any class in College Physics.

ADMISSION OF SPECIAL STUDENTS

1. Persons over 20 years of age may, under certain circumstances, even without satisfying the entrance requirements, be admitted as special students not candidates for degrees. The applicants must give evidence of ability to do creditable work and their applications for admission must be approved by the department heads and the Dean of the College concerned; but they shall not receive any college credit for work done in the University; however, they shall be reported as having completed "satisfactorily" or "unsatisfactorily" the subject or subjects in which they are registered at the end of the given semester.

2. That students admitted to any college or school of the University who have not fulfilled the minimum entrance requirements in the given college or school shall be classified as SPECIAL STUDENTS.

3. That for purposes of this rule, the minimum entrance requirements is the completion of an approved four year secondary course.

That in the Northern Luzon Junior College wherein an entrance examination has been prescribed by the University Council, the taking of this entrance examination shall be considered as a part of the minimum entrance requirements.

That special students will not be allowed to register for more than two years and to enroll for more than nine credit hours a week in classroom or laboratory work except by special permission of the dean concerned; provided, however, that students who have met the academic requirements specified in section (3) and who are admitted to any college mentioned, at the beginning of either the first or the second semester as special students, shall be given credits for the subjects completed "satisfactorily" upon qualifying for entrance at the next test to be given for the purpose.

FOREIGN STUDENTS

Applicants for admission coming from foreign countries should bring complete official credentials.

They are exempt from the entrance examination; provided (1) that their pre-collegiate training is the same or at least equivalent to that called for in the entrance requirements of the college or school where admission is sought; (2) that there is a place for them in the given college or school; (3) and that their connection with this Institution shall immediately terminate should their work in the first semester of their residence be unsatisfactory.

ADMISSION TO ADVANCED STANDING

When a student matriculates in any college or school, he shall be granted advance credit upon presentation of credentials showing that he has attended and passed in some institution of collegiate standing courses fully equivalent to those in this University for which advanced credit is sought. Advanced credit may be either general or specific; provided that whenever specified credit is awarded, the person making the award should name the particular subject or subjects for which advanced credit is given.

Advanced credit may be awarded either by the Registrar or by the heads of departments concerned, provided that the Registrar shall award advanced credit only to students graduated from an institution recognized by the University Council and only for subjects listed in the course or courses duly recognized. The heads of the departments concerned shall award advanced credit to all applicants from unrecognized institutions, and to those from recognized institutions who have taken part of, but have not completed, the entire courses recognized; provided that the award of advanced credit by a department head shall be made only at the request of the dean of the college where the applicant desires to register or is registered and upon passing on the part of the applicant an examination to be given for the purpose.

Application for advanced credit shall be made to the registrar or to the dean of the college concerned not later than July 15 after matriculation. Upon receipt of an application, the deans shall cause the proper department head to examine the applicant or applicants. This examination shall be held on or before July 31, and its result shall be reported to the dean and the registrar not later than August 1 of the same year. Students who fail to take these examinations in the first year of their residence may do so the following year, but no examination for advanced credit may be held between August and May of each year, unless specially authorized by the faculty concerned.

Provided, however, that no advanced credit shall be counted towards graduation within the same academic year in which the advanced credit is given except in the case of students admitted to the last year of any course, and in that case the total units of advanced credit that may be granted shall not exceed the equivalent of one academic year's work.

DEPARTMENT OF ADMINISTRATION AND INSTRUCTION

For the purposes of administration, the University is divided into colleges and schools. Each college constitutes an independent administrative unit empowered to offer courses of instruction and grant degrees, certificates, or titles. Another administrative unit is the school which is also empowered to offer courses of instruction and grant degrees, certificates, or titles under the immediate direction of the director of the school but subject to the control of the dean of the college to which it is attached.

For purposes of instruction, the colleges and schools of the University are divided into departments, each of which functions as an independent unit of instruction under the Head of the Department or, in case of a department without a duly appointed head, under the dean of the college to which the department belongs.

REGISTRATION OF STUDENTS

Students in all undergraduate courses must register for work in each college at the time prescribed by their college. To promote prompt registration, a fee of P5 is charged those who seek to register later than the specified date of registration unless previously excused by the President of the University.

All fees and deposits must be paid on matriculation and before admission to classes.

No person will be admitted as a student to the exercises of any instructor except as authorized by the official certificate of registration furnished to each student by the dean or registrar.

CREDITS

One university unit of credit is one hour lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and, in the technical courses, three hours of drafting or shop work, are regarded as the equivalent of one recitation or lecture.

No student registered in any college or school of the University will be allowed to take more than eighteen non-laboratory units or twenty-one units including laboratory work during each semester, or nine non-laboratory units during each summer: Provided, however, that this rule shall not affect or alter any existing course duly approved by the University Council and the Board of Regents in which more than twenty-one units are required.

GRADES OF SCHOLARSHIP

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such way as the instructor may determine, that he is performing the work of the course in a satisfactory manner.

The result of examinations, together with class work, will be ranked and reported in five grades—1, 2, 3, 4, 5. A grade of 1 denotes marked excellence. A grade of 2 indicates that the student's work has been thoroughly satisfactory. A grade of 3 denotes a pass. A grade of 4 denotes a condition. Courses in which students have obtained a grade of 4 will not be credited to them, except upon passing a second examination. A grade of 5 indicates failure and the necessity of repeating the entire course. The report in case of absence from the examination, or failure to perform any of the allotted work in a given course, is incomplete. Work so required must be made up within a year.

A student who has received a grade of 2 or a grade of 3 in a given subject is not allowed to take a second examination for the purpose of improving his grade.

CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking one examination during the week preceding the opening of the following session or any other examination required by the faculty without the payment of a fee. Examination may be held at other times only

by special permission of the faculty and on payment of ₱10, provided that all conditions must be made up before the opening of the following session.

Students not in residence and who are permitted to take an examination for removal of condition shall be required to pay the registration fee of ₱5 and such other fees as may be required by the Registrar.

Any student who is reported as having failed in a given subject of study or after being conditioned, does not pass a second examination for the removal of the condition, will have to repeat every such subject with the class that next takes it; unless, on recommendation of the instructor in charge, the faculty shall permit him to review a subject in which he is thus conditioned with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or semester.

Any student who has been reported with a grade of Incomplete or a grade of 4, who does not within a year better such grades, will automatically be recorded as having failed in such subjects. Any student who, for reasons of poor scholarship, is dropped with the approval of the Dean from any subject of study by the instructor, will be given a grade of 5 in that subject, unless the faculty shall otherwise determine.

No candidate is to be recommended by the Council for any degree, title, or certificate until all required examinations have been passed.

MILITARY SCIENCE AND PHYSICAL TRAINING

Military Science and Tactics is a required subject in the curriculum of all the colleges of the University. It is a prerequisite for graduation and must be completed during the first two years of residence in the University. In addition to Military Science, all students of the University, except those exempted by proper authority, are required to take one hour a week of physical training during their first two years of residence. Attendance is governed by the same rules applicable to other courses. Examinations are held and grades reported.

Beginning the academic year 1928-1929, students who shall be exempted from military science by the exemption board shall be required to take, in lieu of this exemption, a corresponding number of units of work to be taken in some academic department approved by the adviser and the dean; provided that in the evaluation of the equivalent of military science, each semester's work in this subject shall correspond to 1½ units of academic work; and provided further that no subjects taken prior to the granting of exemption by the authorities concerned shall be allowed as substitution for military science.

LIBRARY

The board of Regents made a special appropriation for the purchase of library books and subscriptions to local dailies and educational and scientific magazines. The Library is spacious enough as to accommodate as many as there who wish to read reference books.

ATHLETIC ASSOCIATION OF THE UNIVERSITY OF THE PHILIPPINES

Every student, registered in any of the Colleges or schools of the University, will pay an athletic fee of ₱1.50 a semester, which will be turned into the treasury of the athletic association.

Each student becomes, upon payment of this fee, a member of the University Athletic Association. Payment of the fee entitles the student to admission to all University athletic contests. The government of this association is vested in a board of control, which consists of a president, a secretary-treasurer, and seven members elected by the University, and seven student representatives from the colleges of the University elected by the student bodies of the colleges concerned. The physical director of the University as a member ex officio of the board of control shall supervise the management and finances of every athletic organization representing the University.

MISCELLANEOUS FEES

Any student who does not carry full load shall be charged on the basis of ₱2 per unit of credit including Physical Education and Military Science, provided that the total number of units taken do not exceed 15.

Tuition fee of ₱30 a semester is charged.

A yearly fee of ₱5 is charged for library privileges.

A fee of ₱10 is charged for the title of Associate in Arts.

A fee of ₱10 is charged for each special examination. (See "Removal of Condition.")

An athletic fee of ₱1.50 a semester is charged. Every student enrolling for one or two or more courses during summer will be charged ₱1.50 for athletic fee.

An entrance examination fee of ₱2 is charged to every student who takes the Type A.

An entrance fee of ₱5 is charged to every new registrant upon his admission to the University.

A fee of ₱5 is charged for late registration.

A subscription fee of ₱1 a semester is charged for the "Norlunian" and ₱0.50 for the University Student Council.

For change of matriculation; that is, enrollment for additional subject, substitution of one subject for another, or for dropping of a subject, a fee of ₱1 is charged.

A fine of ₱2 is charged for unauthorized dropping of subject. Upon failure of the student to pay this amount, the same will be deducted from his deposit.

A fee of ₱5 is charged for change of registration from one college to another.

LABORATORY FEES

A fee of ₱10 a semester is charged in all laboratory subjects Botany or Zoölogy excepting Chemistry and Physics for which a fee of ₱15 and ₱5 respectively is charged.

DEPOSITS

Each student of the Northern Luzon Junior College is required to deposit ₱15 in addition to the regular fees with the Secretary-Treasurer of the University on matriculation.

These deposits are for the purposes of covering any loss of apparatus, supplies, books, etc., or any damage to University property which may properly become a charge against the students.

Whenever a charge is made against the deposit of a student, he is automatically required to deposit an additional sum sufficient to bring the deposit up to the original amount. At the beginning of each semester, as a prerequisite to registration, each student must be prepared to deposit such amount as may be necessary to bring his deposit up to the original amount of ₱15, in case any deduction has been made on account of loss or breakage.

This deposit is to be refunded upon the student's separation from the University and upon compliance with the following requirements:

1. To fill in U. P. Form 46, Property Clearance, a copy of which can be secured from the Collecting-Disbursing-Property Officer who will indicate on the Property Clearance the departments where the student has to secure clearance.

2. To return the U. P. Form 16, application for library card for the Philippine Library and Museum, if the student has any.

3. To secure an honorable dismissal from the Dean. This is not required of graduating students.

With the property clearance duly certified to by the departments concerned and honorable dismissal issued by the Dean, the students should then go back to the Collecting-Disbursing-Property Officer who will issue the corresponding check.

REFUND OF FEES

Students who have paid their tuition and laboratory fees and who leave the University are entitled to a refund of their tuition and laboratory fees in accordance with the following schedule:

	<i>Per cent</i>
Within one week after registration	80
During the second, third, and fourth weeks after registration	50
After the fourth week and thereafter	No refund.

Laboratory fees will not be refunded after one week from the date of registration where change is made from one course to another.

RULES ON ATTENDANCE

1. The rules on attendance herein laid down shall be followed in all the schools and colleges including the Departments of Military Science and Physical Education.

2. No student shall be registered later than the date specified on the University Calendar except under justifying circumstances to be determined by the dean or director of the college concerned; provided, that no student may matriculate in a college or school or enroll in a course later

than two weeks after classes begin and provided further that the rules shall not apply to the Conservatory of Music and the School of Fine Arts. A college or school, or department, to meet special conditions may shorten this period of extension.

3. Any student who for unavoidable cause, is obliged to absent himself from any college or required university class must obtain an excuse written on U. P. Form No. 97 from his dean or director to be presented to his instructors.

4. Excuses for absence shall be presented by the student to the instructors concerned not later than the second session of the class after the date of student's return.

5. Excuses are for time missed only. All work covered by the class during the absence shall be made up to the satisfaction of the instructor and within a reasonable time.

6. When the number of hours lost by absence by a student in one semester reaches 20 per cent of the hours of recitation, lecture, laboratory or any schedule work in one subject for that semester, he shall be dropped from the class roll with a grade of "5" unless the majority of absences are excused. Time lost by late enrollment shall be considered as time lost by absence.

7. Instructor shall control tardiness by reasonable penalties or whatever measures seem best adapted to the circumstances.

8. A student shall be given a grade of incomplete in a course if he is absent from the final examination, provided that his class standing throughout the semester is equivalent to a grade of "3" or better. In case of justifiable absence, he may be given a special examination upon the recommendation of his dean or director.

9. Any student who drops a course or withdraws from a college or school without the approval of his dean or director shall be subject to curtailment of registration privileges. Prolonged leave of absence must be sought by written petition to the dean or director, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired; provided, however, that student granted leave under this clause shall be subject to the scholarship rules of the college or school where he is duly registered. Indefinite leave of absence shall not be granted.

10. A student in good standing who desires to sever his connection with the University shall present a written petition to this effect, signed by his parent or guardian, to his dean or director. If the petition is granted, the student will be "honorably dismissed" and given as evidence U. P. Form No. 98 which he shall file with the dean or director of his college or school. Without such petition and favorable action no record of honorable dismissal will be made.

11. Attendance in the Graduate School shall not be governed by the foregoing rules.

12. Certificates of absences due to illness must be secured from the University physician.

ORATORICAL CONTESTS

The College holds an annual oratorical contest in which the students may compete for forensic honors. The winners of First Honors and Second Honors are awarded Gold and Silver medals, respectively. The third winner is given honorable mention.

The College also holds under its auspices annually the Provincial Oratorical Contest among secondary schools in the province. Prizes consisting of Gold, Silver, and Bronze medals are awarded to winners of First, Second and Third places in the Contest.

ATHLETIC TOURNAMENTS

Aside from the regular physical education classes in calisthenics and gymnastics, the Department of Physical Education of the College conducts under its auspices athletic tournaments among the secondary schools of the northern Luzon provinces.

SCHOLARSHIP RULES

The following rules governing scholarship are in full force and effect in the Northern Luzon Junior College, beginning with the first semester of the academic year 1930-1931.

1. *Grade points*—For the purpose of determining scholastic standing, students' grades shall be evaluated in terms of grade points as follows:

- a. A grade of "1" counts 3 grade points for every unit of credit.
- b. A grade of "2" counts 2 grade points for every unit of credit.
- c. A grade of "3" counts 1 grade point for every unit of credit.
- d. A grade of "4" counts 0 grade point for every unit of credit.
- e. A grade of "5" counts —2 grade points for the course.

Grades obtained in all courses (including noncredit courses except those given for work in Military Science and Physical Education) shall be taken into account in determining the scholarship status of students.

2. *Good standing*.—A student is in good scholastic standing if he earns a total number of grade points equivalent to at least 50 per cent of the total number of units for which he is registered.

3. *Probation*.—A student who can not satisfy the minimum requirement under Rule No. 2 shall be placed on probation.

4. *Academic load*—

- a. A student on probation shall register only for as many units as those in which he obtained at least a grade of 4, but his total load must not exceed 14 units.
- b. A student on probation must pass all his courses before he may increase his load to the maximum allowed by the rules of this college.

5. *Dismissal*.—Students coming under the following rules shall be immediately dismissed from the College:

- a. A student whose sum total of grade points is less than zero.
- b. A student on probation for two successive semesters who can not satisfy the minimum requirement under rule No. 2.

6. *Suspension of the effect of these rules.*—The effect of any one of the above rules Nos. 1, 2, 3, 4, and 5 may be suspended in cases where, on account of illness or other untoward circumstance, a student has been unable to carry on his studies satisfactorily.

7. *Notice of delinquency.*—The parents or guardians of a student who becomes delinquent under these rules will be notified of such delinquency.

8. *Decision on cases.*—The Scholarship Committee has full power to decide all such exceptional cases when presented to it on appeal. A final appeal may be taken to the Dean whose decision must be given in writing.

SCHOLARSHIP HONORS

1. The title of Associate in Arts "with marked distinction" will be granted to students who obtain a grade of 1 in not less than 90 per cent of all subjects in their course and a grade of 2 in all other subjects.

2. The title of Associate in Arts "with distinction" will be granted to students who obtain a grade of 1 in not less than 80 per cent of all subjects in their course and a grade of 2 in all other subjects.

3. Such students should have earned all their credits required for graduation in the University of the Philippines.

GRADUATION REQUIREMENTS

No student will be recommended to the University Council for any degree, title or certificate unless he has fulfilled all the requirements called for in his curriculum including Physical Education and Military Science and until all his indebtedness to the University has been cleared.

Students who complete their course either in summer or in October may be given a certificate to the effect that they have already fulfilled all the requirements for graduation, but their degree will be formally conferred upon them during the regular commencement week in March.

STUDENT EXPENSES

The expenses of a student in Vigan are very much lower than in Manila. The cost of living in Vigan varies from ₱15 to ₱25 a month. There are dormitories for boys and girls near the college. Besides those there are also private residences which accommodate students at reasonable prices. The college has a list of approved dormitories and private residences where students may live. These have been recommended by the College Student Welfare Committee.

The expenses for books vary from ₱20 to ₱40.

SCHOLARSHIPS

A VALEDICTORY SCHOLARSHIP with free tuition fee for a period of one academic year is granted to the student highest in rank (valedictorian) graduating from a standard four-year high school, trade school, commercial school, or other private school of the same standing in the Philippines.

A SALUTATORY SCHOLARSHIP with free tuition fee for a period of one academic year is also granted to the student second in rank (salutatorian) graduating from the schools mentioned in the preceding paragraph.

Formal application for these scholarships should be made in writing before registration, and the application should be accompanied by a certificate signed by the principal or by the director of the school from which the applicant has graduated. These scholarships are granted only on condition that the student meets all the requirements for admission to this University.

THE QUIRINO SCHOLARSHIP PRIZE

The Quirino scholarship prize.—A scholarship prize, donated by Senator Elpidio Quirino, will be awarded to the student obtaining the highest scholastic standing after completing all the requirements for the title of Associate in Arts. Such student should have earned all his credits required for graduation in the Northern Luzon Junior College.

COURSES OF INSTRUCTION

BOTANY

Mr. MOISES M. KALAW

Botany 1; *ELEMENTARY BOTANY*.—Laboratory work, lectures and recitations covering the essentials of elementary botany including morphology and physiology of seed plants, a general survey of the great group of plants, and subjects of general interest such as heredity. This course is required of all first-year students.

Textbooks: Brown, *A Textbook of General Botany*; Brown, *Laboratory Botany*.

9 hours a week (3 Class, 6 Lab.); either semester course, credit 5 units.

Botany 3; *TEACHER'S COURSE IN BOTANY*.—A course designed primarily for those students in the College of Education who plan to major in biology, and for those students taking general course will cover the study of cryptogamic plants with special emphasis on the morphology and life history of the representative types. A brief survey of the classification of plants and an introduction to the elementary problems of plant genetics will also be included.

Textbooks: Brown; *A Textbook of General Botany*; Brown, *Laboratory Botany*; Merrill, *A Flora of Manila*.

Required of Education students majoring in biology.

9 hours a week (3 Class, 6 Lab.); one semester, credit 5 units.

BUSINESS

Business 35; *BUSINESS ENGLISH AND CORRESPONDENCE*.—This course is designed to drill the student in the use of correct and forceful English for business purposes and to train him in writing effective business letters. Considerable emphasis will be given to the study of the technique and procedure of the subject and the methods of influencing the reader and directing him to take the desired action. The subject is approached from the executive's point of view. Considerable practice is given in writing all forms of business letters and reports.

Required of Commerce Students.

3 hours a week; first semester, credit 3 units.

CHEMISTRY

MISS ADELADA T. ORETA

Chemistry 23, *GENERAL AND INORGANIC CHEMISTRY (Pre-medical and General Science)*.—A course giving the essentials of general inorganic college chemistry. Both the fundamental principles of the subject and this practical application to the industries and everyday life are emphasized.

Lectures, recitations and laboratory work.

9 hours a week (3 Class, 6 Lab.); throughout the year, credit 10 units.

Chemistry 26; *ORGANIC CHEMISTRY (Chemistry of Carbon Compounds)*.—An introductory course giving the theoretical principles and practical applications of synthetic organic chemistry. The general relations between different groups of compounds, the application of general reactions and the laboratory preparation and general behavior of compounds characteristic of each group are emphasized.

Prerequisite: Chemistry 23

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); throughout the year, credit 10 units.

Chemistry 27; *QUALITATIVE INORGANIC ANALYSIS*.—A systematic qualitative analysis of basic and acidic constituents of compounds, with drill in the analysis of mixtures, minerals, and alloys (unknowns) the composition of which is unknown to the student. Each "unknown" is considered a practical examination. A course designed primarily for pre-medical students.

Prerequisite: Chemistry 23

Lectures, recitations, and laboratory work.

9 hours a week (3 Class, 6 Lab.); first semester, credit 5 units.

ECONOMICS AND ACCOUNTING

Mr. ENGRACIO D. GUERZON

Economics 11; *PRINCIPLES OF ECONOMICS*.—This subject is intended to give the students a thorough grasp of the principles underlying the structure and activities of modern economic life in order to enable them to apply intelligently sound economic reasoning to its practical affairs. The subject matter covers the statement and interpretation of the principles and the discussion of their application to the problems of production, value-determination, money and prices, the functional and institutional aspects of the distribution of wealth and income, and international economic relations.

Required of second year commerce; Education (Economic major); and General Course students.

3 hours a week; second semester; credit 3 units.

Economics 12; Principles of Economics 3 hours a week; credit 3 units

Economics 16; *ECONOMIC DEVELOPMENT OF THE PHILIPPINES*.—This course traces the economic history of the Philippines from the earliest times prior to its discovery and conquest by the Spaniards up to the present with special emphasis on conditions since 1900. The aim is to show to what extent economic forces have determined the history and progress of the country.

Required of Commerce; Education (Economic major); General and Pre-Law students.

3 hours a week; second semester; credit 3 units.

Economic 15; *ECONOMIC DEVELOPMENT OF THE UNITED STATES.*—This course traces the economic history of the United States from the period of settlement to the present time, with emphasis on conditions since 1865; origin and growth of leading American industries; changes in industrial organization; commercial policies; influence of economic conditions on political history; problems of expansion.

Required of Commerce students.

3 hours a week; first semester, credit 3 units.

Economics 7; *MONEY, BANK CREDIT, AND PRICES.*—A critical analysis of the theories, problems and policies concerning money; bank credit and prices. Special emphasis is placed upon fundamental principles governing different media of exchange, index numbers, monetary standards, price levels and the value of money in general. Considerable time will also be given to a discussion of the feasibility of control of fluctuations in prices and a sound monetary system.

Prerequisite: Economics 1. Required of all Commerce students.

3 hours a week; second semester; credit 3 units.

Accounting 1; *FUNDAMENTALS OF ACCOUNTING.*—This course is an introduction to the study of accounting intended for the general students of business as well as for the beginning students in accounting. It deals primarily with the fundamental principles of accounting as applied to sole proprietorship business and correlated with the double-entry bookkeeping practice applicable thereto. The subject matter includes: the nature and analysis of business transaction; theory of debts and credits; classification of account; the recording of business transaction in books of account; the taking of trial balance and location of errors therein; the adjusting and closing entries; the preparation of simple financial statements; related topics such as development of special journals and subsidiary ledgers; and a discussion of the business procedures and forms as background for the accounting instruction. Throughout this course the practice set will constitute an important part of the students' home work, supplemented by problems and questions.

Prerequisite to all accounting courses. Required of all business students.

3 hours a week; first semester, credit 3 units.

Accounting 2; *FUNDAMENTAL OF ACCOUNTING II.*—This course is a continuation of Accounting 1 in which accounting principles are applied to single proprietorship and partnership business. The subject matter of the course includes; single entry system of bookkeeping; the change of single entry to double entry; development of accounting records, such as the use of columnar journals; entries for notes receivable, notes payable, and drafts; business procedures and forms; expansion and classification of accounts; basic interrelation between accounting and business management; and problems in connection with the formation, operation,

and dissolution of partnerships. Throughout this course the practice set will constitute an important part of students' homework. It will be supplemented by problems and questions.

Prerequisite to further accounting courses. Required of all commerce students.

3 hours a week; 2nd semester, credit 3 units.

Accounting 3; *ACCOUNTING PRINCIPLES*.—A continuation of Accounting 2 in which accounting principles are applied to the manufacturing type of business and to the corporate form of organization. The subject matter of the course includes accounts peculiar to a manufacturing business such as raw materials, direct labor, manufacturing expenses, work in process, and finished product; accounts peculiar to a corporation such as capital stock, par and no-par value, subscriptions, unissued, unsubscribed stock, treasury stock, surplus, etc.; development of accounting records such as operation of voucher register; factory ledger; check register; columnar journal, etc. Throughout this course the practice set will constitute an important part of the students' homework. This course will be supplemented by problems and questions. Required of commerce students.

3 hours a week, second semester, credit 3 units.

EDUCATION AND PSYCHOLOGY

DR. AGUSTIN S. ALONZO

Education A; *INTRODUCTION TO EDUCATION*.—This course aims to introduce the student to the study of education. It is a survey course and aims to do for education what general science does for later specialized courses in science. The course deals with teaching as a profession, the child as an object of study, the curriculum, the necessity for good methods, the public school organization, educators of the past and present, and many other major problems that are met in the field of education. The purpose of the course is to prepare the student for specialized study to come later.

Required of second-year Education students.

3 hours a week; first semester, credit 3 units.

Education 1; *HISTORY OF EDUCATION*.—The growth and development of education doctrine into its modern form.

Required of 2nd year Education students.

3 hours a week, second semester, credit 3 units.

Psychology 1; *ELEMENTARY PSYCHOLOGY*.—Lectures, experiments, recitations, and writing exercises calculated to impress upon the beginner the principles of science of psychology.

Required of second-year students in Education.

3 hours a week; first semester, credit 3 units.

Psychology 3; *GENETIC PSYCHOLOGY*.—The evolution of mind in the race as indicated by the behavior of organisms, from the simplest to

the highest and most complex; as it develops in the individual from infancy to adulthood. Readings, lectures, reports, observation, original papers.

Prerequisite: Psychology 1. Required of all students in the second-year Education.

3 hours a week; second semester, credit 3 units.

ENGLISH

Mrs. LEONA S. JARAMILLO; Mr. AUGUSTO C. CATANJAL

English 1; *FRESHMAN COMPOSITION*.—This course deals with the fundamentals of correct English expression, and is designed to aid the student in forming correct language habits. Study of the principles of English composition, the writing and revision of original themes, and collateral reading form the content of the course, which is prerequisite to all other courses in English.

3 hours a week (Class); both semester, credit 6 units.

English 8; *EXPOSITORY WRITING*.—This course takes up some of the principal types of exposition, such as Expository Narrative and Description, the Explanation of a Process, Criticism and the Familiar Essay. In addition to study of a text, weekly theme writing and collateral reading are required.

Prerequisite: English 1.

Required of Pre-Law, General and Commerce students.

3 hours a week (Class); first semester, credit 3 units.

English 9; *ARGUMENTATION*.—Study and practice of the Argumentation. The course consists of brief writing and debate, both written and oral based on a study of the first principles of logic, the kinds of evidence, etc.

Prerequisite: English 1. Normally preceded by English 8.

Required of Pre-Law and General Course Students.

3 hours a week (Class); second semester, credit 3 units.

English 11; *SURVEY OF ENGLISH LITERATURE*.—Readings in the principal types of literatures as practiced by leading authors in the several periods of English literary development.

Required of Education students.

3 hours a week (Class); first semester, credit 3 units.

English 12; *SURVEY OF ENGLISH LITERATURE*.

3 hours a week (Class); second semester, credit 3 units.

English 107; *AMERICAN LITERATURE*.—A survey of American literature to the close of the Nineteenth Century. This course includes a study of every major writer, an analysis of his chief works, and a critical appreciation of his place and influence in American literature. Intensive reading will be required of students from leading writers of

each period, with reports and quizzes thereon. This course is offered both as a general culture course and as preparation for teaching in the Philippine public schools.

Prerequisite: English 1.

Required of Education (English major) students.

3 hours a week (Class); either semester, credit 3 units.

FRENCH AND SPANISH

DR. VICENTE ENCARNACION

French 1; *ELEMENTARY GRAMMAR AND COMPOSITION*.—Reading and translation of easy French prose.

3 hours a week (Class); throughout the year, credit 6 units.

French 2; *INTERMEDIATE FRENCH*.—Second part grammar and composition—sight translation of easy French prose and conversations.

3 hours a week (Class); throughout the year, credit 6 units.

Spanish 10; *ELEMENTARY SPANISH*.

Spanish 11; *ELEMENTARY SPANISH*.—A study of the elements of the Spanish language, with reading and exercises in conversation and composition.

Textbook: Moreno-Lacalle's *Elementos de Español*.

The two courses of one semester each, constitute a year course, with credit of 6 units divisible into two semestral courses of 3 units each.

3 hours a week (Class) either semester.

Spanish 12; *INTERMEDIATE SPANISH*.

Spanish 13; *INTERMEDIATE SPANISH*.—Spanish grammar; reading, conversation, and composition.

Courses as in Elementary Spanish.

Prerequisite: Spanish 10 and 11, or its equivalent. For Spanish 13; Spanish 12.

Textbook: F. T. D.'s *Gramatica Española* (tercer grado), según los principios de la Real Academia; Alvarez-Quintero's *La Flor de la Vida*, and Morley's *Spanish Humor in Story and Essay*.

3 hours a week (Class) either semester.

HISTORY

MR. JOSE B. MACAFIA

History 2; *MODERN AND CONTEMPORARY EUROPE, 1815-1924*.—This course will treat of the Congress of Vienna, the industrial revolution, the development of Italian and German unities, the intellectual achievements of the nineteenth century, modern social problems, imperialism in Africa and the Orient, and the World War.

3 hours a week; first semester, credit 3 units.

History 5; *PHILIPPINE HISTORY*.—Rapid survey of Philippine history with emphasis on the political, social, and economic progress of the Philippines during the nineteenth century. The introductory part of this

course is devoted to a rapid survey of early Filipino civilization and Philippine conditions in the early years of Spanish rule, to be followed by a consideration of the outstanding incidents and developments of the eighteenth century. The remaining part takes up such matters as Philippine representation to the Spanish Cortes, opening of the Philippines to foreign countries, economic and political progress, the propaganda movement, and the outbreak of the Philippine Revolution.

Prescribed for all students.

3 hours a week, second semester, credit 3 units.

History 6; *ORIENTAL HISTORY*.—Brief survey of the modern history of India, China, Japan, Korea, etc., and their European associations.

Required of Education (History major) students.

3 hours a week; second semester, credit 3 units.

History 25; *UNITED STATES HISTORY, 1492-1929*.—A general survey of the history of the United States from the discovery to the present with particular emphasis on social, economic, and political conditions.

Required of Education (History major) students.

3 hours a week; first semester, credit 3 units.

LIBRARY SCIENCE

Mr. PERFECTO SISON

Library Science 12; *USE OF BOOKS AND LIBRARIES*.—Introductory study of reference books and library methods as applied to individual study and research; the library card catalog; the more generally used reference books; Government publications, indexes to periodical literature. Training in the use of bibliographic aids and in compiling simple subject bibliographies.

The aims of this course are to familiarize the students with the resources of the library and with the standard works of reference; to help them to recognize books as essential sources of information and effective means of culture; and to train them in the intelligent and efficient use of books and libraries.

This course is intended for students who are neither majoring nor minoring in library science.

3 hours a week (Class); one semester, credit 3 units.

Library Science 108; *SCHOOL LIBRARIES I*.—Classification, cataloging, subject headings, and library economy. Lectures, discussions, and practical work, simplified to meet the needs of elementary school and small public libraries. Instruction is given: (a) in classification with the abridged edition of Dewey's Decimal Classification as the basis, and in the assigning of book numbers; (b) in dictionary cataloging and in making a sample catalog; and (c) in assigning subject headings, with Sear's List of Subject Headings for Small Libraries (2d ed.) as the basis. Toward the end of the course the three phases of work are correlated so as to give the students practice in the complete and unified process of cataloging a book, including the assignment of call numbers. Under library economy

are included accessioning, shelf-listing, labeling, gifts, withdrawals, charging systems, inventory, library hand writing, checking and care of serials, preparation of book for the shelves, and other mechanical processes.

This course in elementary technical methods is open to students who are neither taking the regular library science course in the College of Liberal Arts, nor pursuing the course in education with major in library science in the College of Education.

3 hours a week (Class); credit 3 units.

Library Science 109; *SCHOOL LIBRARIES II*.—Organization and administration of, and book selection for, school libraries.

Part 1 includes the place of the school library in modern education and its relation to curriculum and extracurricular activities; duties and responsibilities of the school librarian and his relation to administrative officers and faculty; school library rooms; standards of equipment and supplies; records and statistics; care of various types of library material; bookbinding and repair; publicity.

Part 2 covers a study of the principles and methods of selecting books for different types of school libraries, with emphasis on children's literature and on the use of bibliographic aids; selection of periodicals; book buying.

Part 3 is devoted to practice work covering not less than twenty-five hours in the normal and high-school libraries during the semester, and observation of the work of libraries of different types in the province under the guidance of the instructor.

This course is open only to students who are taking neither regular library science course in the College of Liberal Arts, nor the education course with major in library science in the College of Education.

3 hours a week (Class); credit 3 units.

Library Science 122; *CLASSIFICATION, SUBJECT HEADINGS AND LIBRARY ECONOMY*.

Part 1: A study of the general principles of classification with an intensive study of the Dewey Decimal Classification. Some attention is given to the Library of Congress system of classification. Assignment of the book number and other parts of the call number.

Part 2: A study of the principles of subject entry in a dictionary catalog and practice in assigning subject headings.

Part 3: Under the heading library economy are grouped various library records and routine, such as mechanical processes, accessioning, shelf-listing, charging systems, care of gifts, serials, pamphlets and supplies; care of shelves, inventory, withdrawals; business correspondence.

3 hours a week (Class); second semester, credit 3 units.

MATHEMATICS AND PHYSICS

Dr. TRINIDAD J. JARAMILLO

Mathematics A; *REVIEW OF ELEMENTARY ALGEBRA AND GEOMETRY*.

Required of all students who failed in Mathematics entrance test.

3 hours a week; one semester, no credit.

Mathematics 1; *COLLEGE ALGEBRA*.—Quadratics with graphs; Progressions; Inequalities; Complex Numbers; Permutations and Combinations; Binomial Theorem; Probabilities; Determinants; Theory of Equations.

Prerequisite: Mathematics A or equivalent.

Required of Commerce, Medicine and Education (Mathematics major) students.

3 hours a week first semester, credit 3 units.

Mathematics 2; *THEORY OF INVESTMENT*.—Logarithms; Simple and Compound Interest; Annuities; Bonds.

Prerequisite: Mathematics 1.

3 hours a week; second semester, credit 3 units.

Mathematics 3; *ALGEBRA AND TRIGONOMETRY*.—Review of High School Algebra, Quadratic Equations and Graphs; Arithmetical and Geometrical Progressions; Definition of Trigonometric functions; Logarithms; Solution of Right Triangles. For pharmacy and dentistry students and students majoring in General Science.

Mathematics 4; *TRIGONOMETRY*.—Logarithms; Trigonometric Functions with Graphs; General Formulas; Solution of Triangles with Applications; Elements of Spherical Trigonometry with Applications to Astronomy.

Required of Pre-Medic and Education (Mathematics Major) students.

Prerequisite: Mathematics A or equivalent.

3 hours a week; second semester, credit 3 units.

Mathematics 10; *ANALYTICAL GEOMETRY*.—Plane Analytics; Conic Sections; Graphs; Introduction to Solid Analytics.

Required of students majoring in Mathematics.

Prerequisites: Mathematics 1 and Mathematics 4.

5 hours a week; one semester, credit 5 units.

Mathematics 21; *CALCULUS 1*.—Required of engineering students and students majoring in Mathematics.

Prerequisite: Mathematics 10 or 12.

5 hours a week; first semester, credit 5 units.

Physics 31; *GENERAL PHYSICS* (Prerequisites: Physics A), or its equivalent, Mathematics 4.—Certain topics which should be of special value to premedical students are emphasized. The work is carried on by means of lectures, quizzes, laboratory work, and problems in physics.

6 hours a week (3 Lab. 3 Lect.); first semester, credit 4 units.

Physics 32 (Phys. 32 or 2 M); *GENERAL PHYSICS* (Prerequisites: Physics A, or its equivalent, Mathematics 4, Physics 31, first semester).—The course is a continuation of Physics 31.

6 hours a week (3 Lab. 3 Lect.); second semester, credit 4 units.

Physics A; *HIGH-SCHOOL PHYSICS*.—Required of all students who have failed in the Entrance Test, Type A, and who desire to take higher physics.

PHYSICAL EDUCATION

Mr. FORTUNATO ROQUE

Physical Education 1 (Hygiene)—Personal Hygiene.—An elementary course emphasizing the importance of right living. Required of all new students. Lectures, collateral reading, conferences. A written examination is required. Lecture, one hour a week, freshman year, first and second semesters.

Physical Education 2—Progressive mass free-hand gymnastics.—Beginners' lessons in wrestling and boxing. Games and outdoor sports.

1 hour a week, first and second semesters.

Physical Education 3—Progressive mass free-hand gymnastics, and light apparatus.—Progressive lessons in boxing and wrestling. Games and outdoor sports.

1 hour a week, first and second semesters.

POLITICAL SCIENCE AND SOCIOLOGY

Dr. VEDASTO J. SAMONTE

Political Science 2; *CONSTITUTIONAL HISTORY*.—A rapid survey of the growth of constitutionalism in Great Britain, the United States, Spain, and the Philippines. Prescribed in the first year of the Preparatory Law, General, and Education students.

3 hours a week; first semester, credit 3 units.

Political Science 3; *AMERICAN GOVERNMENT*.—A study of the government and politics of the United States. Prescribed in the second year of the Preparatory Law course.

3 hours a week (Class) second semester, credit 3 units.

Political Science 4; *PHILIPPINE GOVERNMENT*.—A course dealing with the organization and working of the Philippine Government and politics.

Lectures, and assigned readings. Prescribed in the first year of the Preparatory Law, General course, and Education students.

Political Science 5; *ORIENTAL GOVERNMENTS*.—A study of the government and political relations of the Orient, particularly of Japan, China. Prescribed in the second year of the Preparatory Law course.

3 hours a week (Class); first semester, credit 3 units.

Political Science 6; *EUROPEAN GOVERNMENTS*.—A study of the fundamental organization of the principal European governments. Prescribed in the second year of the Preparatory Law course.

Prerequisite: Political Science 2.

3 hours a week (Class); second semester, credit 3 units.

Sociology 11 (Soc. 11); *ELEMENTARY SOCIOLOGY*.—An orientation course in the field of Sociology. The nature and scope of Sociology; social forces; social processes and social problems with application to local social conditions.

Required of Pre-Law and General course students.

3 hours a week; second semester, credit 3 units.

ZOÖLOGY

Mr. EULOGIO ESTAMPADOR

Zoölogy 1; *INTRODUCTION TO PRINCIPLES OF ZOÖLOGY*.—This course is designed to be introductory to medicine as well as to give a general introduction to zoölogy. The first half is devoted to the study of the gross anatomy, histology, physiology, habits and embryology of the frog; the second half of the study of those lower organisms which are of general interest to students of zoölogy.

Required of all students.

9 hours a week (6 Lab. 3 Class); either semester, credit 5 units.

Zoölogy 21; *COMPARATIVE ANATOMY AND PHYLOGENY OF VERTEBRATES*.—Organs and systems and their phylogeny will be traced through various groups of vertebrates from a morphological and physiological point of view. Required course for the students intending to study medicine. Others will be admitted.

Prerequisite: Zoölogy 1.

9 hours a week (6 Lab. 3 Class); one semester, credit 5 units.

Zoölogy 24; *SYSTEMATIC ZOÖLOGY*.—A general systematic survey of the animal kingdom and study of morphology, physiology, and distribution of animals. Training in classification and general and special methods of collecting and preserving animals. Primarily for Education students. Others will be admitted.

Prerequisite: Zoölogy 1 or its equivalent.

9 hours a week (6 Lab. 3 Class); one semester, credit 5 units.

**CURRICULUM
COMMERCE
FIRST YEAR**

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Eng. 1	3	3	Engl. 1	3	3
Span. 10 or Fr. 1	3	3	Span. 11 or Fr. 1	3	3
Hist. 2 or Soc. Sc. 1 ..	3	3	Hist. 5 or Soc. Sc. 2 ...	3	3
Math. 1	3	3	Acctg. 1	3	3
Bot. 1	9	5	Zoöl. 1	9	5
Phys. Educ. 1 and 2 ..	2	2	Phys. Educ. 1 and 2 ..	2	2
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		20.5	Total		20.5

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
Span. 12 or Fr. 2	3	3	Span. 13 or Fr. 2	3	3
Econ. 11	3	3	Econ. 12	3	3
Acctg. 2	3	3	Acctg. 3	3	3
Bus. Eng. 35	3	3	Math. 2	3	3
Econ. 16 (Econ. 2) ..	3	3	Econ. 15 (Econ. 3) ...	3	3
Phys. Educ. 3	1	1	Phys. Educ. 3	1	1
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		17.5	Total		17.5

**EDUCATION
FIRST YEAR**

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Span. 10 or Fren. 1 ..	3	3	Span. 11 or Fren. 1 ...	3	3
Hist. 2 ^a	3	3	Hist. 5	3	3
Mathematics 1 ^b	3	3	Mathematics 4	3	3
Pol. Sc. 2	3	3	Pol. Sci. 4	3	3
Botany 1 or	9	5	Zoölogy 1 or	9	5
Chemistry 23			Chemistry 23		
Phy. Educ. 1 & 2	2	2	Phy. Educ. 1 & 2	2	2
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		20.5	Total		20.5

^a May be taken by Hist. Maj. & Pol. Sc. minor one Lab. Sc. subject.

^b For Matn. and Physics majors.

SECOND YEAR

<i>First Semester</i>					
	Hours	Units		Hours	Units
Span. 12 or Fren. 2 ...	3	3	Span. 13 or Fren. 2 ...	3	3
English 11	3	3	English 12	3	3
Education A	3	3	Education 1	3	3
Psychology 1	3	3	Psychology	3	3
Maj. Subject	3	3	Maj. Subject	3	3
Phy. Educ. 3	1	1	Phy. Educ. 3	1	1
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		17.5	Total		17.5

GENERAL COURSES

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Span. 10 or Fren. 1 ...	3	3	Span. 11 or Fren. 1 ...	3	3
Hist. 2	3	3	History 5	3	3
Pol. Sc. 2	3	3	Pol. Sci. 4	3	3
Botany 1	9	5	Zoölogy 1	9	5
Phy. Educ. 1 & 2	2	2	Phy. Educ. 1 & 2	2	2
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		20.5	Total		20.5

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 8	3	3	English 9	3	3
Span. 12 or Fren. 2 ...	3	3	Span. 13 or Fren. 2 ...	3	3
Lab. Science	9	5	Lab. Science	9	5
Psychology 1	3	3	Sociology 11	3	3
Economics 1	3	3	Economics 2	3	3
Phy. Educ. 3	1	1	Phy. Educ. 3	1	1
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		19.5	Total		19.5

PREPARATORY LAW

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
Span. 10 or Fren. 1 ...	3	3	Span. 11 or Fren. 1 ...	3	3
Hist. 2	3	3	Hist. 5	3	3
Pol. Sc. 2	3	3	Pol. Sc. 4	3	3
Botany 1	9	5	Zoölogy 1	9	5
Phy. Educ. 1 & 2	2	2	Phy. Educ. 1 & 2	2	2
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		20.5	Total		20.5

SECOND YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 8	3	3	English 9	3	3
Span. 12 or Fren. 2 ...	3	3	Span. 13 or Fren. 2 ...	3	3
Sociology 11	3	3	Economics 2	3	3
Pol. Sc. 5	3	3	Pol. Sc. 3	3	3
Psych. 1 or Phil. 1 ...	3	3	Pol. Sc. 6	3	3
Phy. Educ. 3	1	1	Phy. Educ. 3	1	1
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		17.5	Total		17.5

FIRST YEAR

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
English 1	3	3	English 1	3	3
French 1	3	3	French 1	3	3
Chemistry 23	9	5	Chemistry 23	9	5
Mathematics 1	3	3	Mathematics 4	3	3
Botany 1	9	5	Zoölogy 1	9	5
Phy. Educ. 1 & 2	2	2	Phy. Educ. 1 & 2	2	2
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		22.5	Total		22.5

<i>First Semester</i>			<i>Second Semester</i>		
	Hours	Units		Hours	Units
French 2	3	3	French 2	3	3
Chemistry 26	9	5	Chemistry 26	9	5
Chemistry 27	9	5	Zoölogy 21	9	5
Physics 31	6	4	Physics 32	6	4
History 2	3	3	History 5	3	3
Phy. Educ. 3	1	1	Phy. Educ. 3	1	1
Mil. Sc.	3	1.5	Mil. Sc.	3	1.5
Total		22.5	Total		22.5

The Conservatory of Music

OFFICERS OF ADMINISTRATION

President of the University: Dr. RAFAEL PALMA.

Director of the Conservatory: Dr. FRANCISCO SANTIAGO.

Secretary: Mr. JOSE GENEROSO.

BUSINESS DIRECTORY

OFFICE OF THE DIRECTOR: The office of the Director is located in a building at the corner of Nebraska and Isaac Peral, Ermita, Manila.

OFFICE TELEPHONE NUMBER: 5-69-21

Local: 32

CORRESPONDENCE: Address all correspondence to the Director of the Conservatory of Music, University of the Philippines, Manila, P. I.

THE FACULTY

- NICANOR ABELARDO,
Instructor in Theory and Composition.
- EUGENIA AGONCILLO,
Instructor in Pianoforte.
- JUSTINA G. ARELLANO
Instructor in Voice Culture.
- ANTONIO APRECIO,
Teacher in Bassoon.
- PEDRO AQUINO,
Teacher in Viola and Contrabass.
- FELIX BASCON,
Teacher in Clarinet.
- ANTONINO BUENAVENTURA,
Assistant Instructor in Theory.
- EMILIA COBARRUBIAS,
Assistant Instructor in Voice Culture.
- RODOLFO CORNEJO,
Assistant Instructor in Theory and Pianoforte.
- EMILIA REYSIO-CRUZ,
Instructor in Voice Culture.
- BERNARDINO CUSTODIO,
Assistant in Theory and Pianoforte.
- JULIO ESTEBAN ANGUITA,
Instructor in Pianoforte.
- GREGORIO FERNANDO,
Teacher in French Horn.
- LUCIA FRANCISCO,
Instructor in Pianoforte.
- ROSARIO LOPEZ-GARCIA,
Instructor in Pianoforte.
- JUAN S. HERNANDEZ,
Instructor in Theory and Composition.
- CONCEPCION CRUZ-HERRERA,
Instructor in Pianoforte.
- MONTSERRAT IGLESIAS,
Instructor in Voice Culture and Italian (on leave)
- CAYETANO JACOBE,
Instructor in Violin.
- ELISA MAFFEI DE LOPEZ LUNA,
Instructor in Pianoforte and Voice Culture.
- BENEDICTA MACAISA,
Assistant Instructor in Pianoforte.

- SERAFIN MAGRACIA,
Instructor in Pianoforte.
- RAMON MENDOZA,
Instructor in Violin.
- ANTONIO J. MOLINA,
Instructor in Theory and Composition.
- MANUELA DE MONSERRAT,
Instructor in Pianoforte.
- PACITA O. NOLASCO,
Assistant Instructor in Voice Culture,
- VASSILY PRIHODKO,
Professor in 'Cello and Chamber Music.
- CONCHITA RODAS,
Assistant Instructor in Pianoforte.
- ROSITA SANDEJAS,
Assistant Instructor in Theory and Pianoforte.
- JENO VON TAKACS,
*Professor in Advanced Theory, Composition
and Pianoforte.*
- RAMON TAPALES,
Instructor in Violin.
- ERNESTO VALLEJO,
Instructor in Violin.
- MARCELO URIZAR,
Professor in Voice Culture.

THE CONSERVATORY OF MUSIC

AIM

The Conservatory of Music aims to impart a comprehensive artistic education in all branches of music such as is imperative for those who wish to devote themselves to music *professionally*, as instrumentalists, singers, music teachers, conductors, or composers. The international standards existing in Conservatories of high repute must be taken as a basis completely and absolutely, and as a result of its efficiency, the Conservatory of Music must produce graduates whose capabilities and artistic training enable them successfully to compete with graduates of Conservatories of recognized standing in America or Europe.

ORGANIZATION

The Conservatory of Music is divided into (a) Preparatory Department and (b) Regular Conservatory Department.

The PREPARATORY DEPARTMENT is divided into four subdivisions of eight grades, covering a period of four years of study: Beginners, Elementary, Junior, and High.

The REGULAR CONSERVATORY DEPARTMENT is divided into four subdivisions, covering a period of four years of study: Freshman Year, Sophomore Year, Junior Year, and Senior Year.

The entire course of study covers generally a period of eight years, and is designed for all those who enter the Conservatory without previous knowledge of music and who intend to acquire their complete musical education and training in the Conservatory.

Very talented and exceptionally rapidly advancing pupils, however, may shorten this eight-year period of study by earlier promotions after successful examinations, conditioned always upon the complete fulfilment of the regular prescribed curriculum of the different courses and grades respectively attended.

Students with previous training and experience may after a successful entrance examination and upon determination of the examination committees and with the approval of the Director be admitted to higher grades of studies.

FEES

The tuition fee in the Conservatory of Music is ₱30, a semester. In addition, the following fees are also charged: Entrance, ₱5 to be paid upon the student's admission to the University; Instrument, ₱15 a semester; Library, ₱2.50 a semester; Medical, ₱2 a semester; Athletic, ₱1.50 a semester; Philippine Collegian, ₱1 a semester. An entrance fee of ₱5 is also charged special students.

Special students pay a fee of ₱16 a month for which they shall receive not more than two hours of instruction a week.

A fee of ₱2 a month is charged for one hour daily practice on the piano.

REQUIREMENTS FOR ENTRANCE EXAMINATION TO HIGHER GRADES

Applicants to higher grades shall submit to an examination conducted by members of the Teaching Staff who are appointed by the Director. This examination is held in order (1) to give examiners a view of the general abilities of the applicant for admission, (2) to enable them to ascertain the character of the preliminary training and knowledge of the student, and (3) if he is found acceptable, to determine to what classes and teachers he shall be assigned.

It is a matter of course that promotion to a higher division is always dependent upon the complete fulfillment of the requirements of the previous division, to be proved in the Entrance Examination.

ASSIGNMENT OF PUPILS TO TEACHERS

The Director has absolute discretion in the assignment of pupils to their teachers. Such assignment will depend (1) on the number of vacancies available in the different classes, and (2) on the showing made by the student in the entrance examination. Students may, however express their preference which will receive due consideration.

SEMESTRAL EXAMINATIONS

At the end of each semester all students of the Preparatory Department are examined in their major study by a Board of Examiners appointed for this purpose by the Director.

In the Regular Conservatory Department, the Board of Examiners is composed of all the faculty of the department in which the student is majoring.

REPORTS

Reports.—A report of the work of each student shall be kept on record and at the end of every semester shall be transmitted to the parents or guardians in accordance with existing regulations of the University. In addition to such semestral report, a statement of the progress of each student may, on request of parents or guardians be furnished provided that such a statement shall not be required oftener than once a month.

PRIVATE LESSONS

Private lessons.—No member of the faculty of the Conservatory of Music shall be permitted to give private lessons to any student of the Conservatory and to accept payment therefor.

No student of the Conservatory of Music will be permitted to take private lessons in any subject which he or she may be studying in the Conservatory.

PUPILS' RECITALS

Pupils preparing themselves for a public career, as soon as they are sufficiently advanced, receive here the training necessary. To play or sing successfully before an audience is an art in itself, and can only be learned in one way—by frequent public appearances. Pupils of the Conservatory

who acquit themselves satisfactorily are afforded opportunities to appear in these concerts and recitals. The first appearance is usually made before an audience limited to pupils of the Conservatory. Confidence once established, the student is accorded the privilege of appearing in the public entertainments. The most advanced students are privileged to play with orchestral accompaniment or to give solo recitals.

GRADUATION EXAMINATION

1. *Division and Subjects of the Examination:*

The Examination is divided into two parts: (a) Practical Examination in the Principal Subjects and (b) Theoretical Examination in the Obligatory Secondary subjects.

2. *Board of Examiners:*

The examination shall be held before the Director and the entire faculty of the school. Votes shall be cast only by such instructor as have attended the examination. The presiding officer shall be responsible for the conduct of the examination. Every examination shall be reported in an official record which shall be signed by at least four members of the Board of Examiners.

3. *Application for Graduation Examination:*

The application for examination must be made in writing and presented to the secretary of the school. In the application are to be indicated the principal subject and the obligatory secondary subjects.

To the application must be attached:

(a) A list written by the applicant of the works studied during his study of the principal subject in the Conservatory.

(b) A list of the prepared repertoires for the examination.

(c) A written declaration of the teacher of the principal subject, approving the application for examination.

If the teacher of the principal subject disapproves the application of the candidate, the latter has the right to apply to the Director of the Conservatory whose decision shall be final.

4. *Admission to the Examination:*

After submitting the application, the candidate shall receive notice concerning his admission. Admission to the examination may be refused for concrete reasons, such cases to be decided by the Director upon agreement with the Faculty.

5. *Requirements:*

Composition

(a) Composition of an orchestra and choral work to be assigned by the Director with the consent of the teacher, the theme to have been assigned to the applicant eight weeks previously. The work may on occasion receive public performance by the Chorus and Orchestra of the Conservatory.

Submission of compositions in the larger forms.

(b) Rough draft of an *A-Cappella-Motette* on a text to be assigned by the Director (four-hour paper work).

(c) Elaboration of a short Quartetto-Movement of from eight to sixteen measures, on an assigned theme (blackboard work).

(d) Free modulation on an assigned theme.

(e) Analysis of a choral or orchestral score.

(f) Skill in written transposing.

At the piano the requirements demand at least the mastery of a Mozart Sonata.

In History of Music the requirements demand especially a knowledge of the history of style in music and acquaintance with the principal works and the leading masters of music literature.

Knowledge of Instruments.

Voice Culture

Applicants must be able to perform:

(a) An Aria or Song assigned fourteen days previously.

(b) A piece that has been independently studied.

(c) Students must possess a repertoire of ten Arias and twenty songs. Students enrolled in the Operatic School must know the principal pieces in their voice and be able to perform six pieces of these. A list of the roles that have been studied and a record of participation in public performances of the Conservatory must be presented.

(d) Rudiments of music and harmony (as far as Modulation).

(e) Sight Singing of vocal composition with words.

(f) Elocution: Vocal students must recite a poem that has been prepared within a time limit under observation and read a lyric or dramatic piece (of their own choosing) at sight. Knowledge of phonetic principles is required.

(g) Italian, French & German: A passage is to be translated, without previous preparation, and evidence of a knowledge of the rules of pronunciation must be given.

(h) At the piano the requirement demands at least the mastery of a Mozart Sonata.

(i) History of Music: Familiarity with the general history of music particularly that of song and the opera, and of their leading masters and principal works.

PIANO

Applicants must be able to perform:

(a) A modern piano composition, assigned fourteen days previously and independently studied.

(b) An independently studied, memorized piece.

(c) The students must possess a repertoire of two Preludes and Fugues from the Well Tempered Clavichord of Bach, one Sonata by Beethoven, two Chopin etudes, a piano concerto and three pieces of romantic or modern masters.

(d) Performance of an assigned piece, to be prepared within an hour

(e) Sight reading.

(f) Theory: Knowledge of Harmony, of the four-part harmony, (without double Counterpoint) Modulation, Forms (Analysis).

(g) History of Music: Familiarity with the outlines of musical history, particularly of piano music, and of its leading masters and principal works.

(h) Knowledge of instruments: Outline of the history of the Piano.

VOLIN, VIOLONCELLO, AND ORCHESTRAL INSTRUMENTS

Applicants must be able to perform:

(a) The students must perform a repertoire of at least one classical and one modern concerto and one of three prepared Etudes from Paganini and one solo Sonata or Suite from J. S. Bach.

(b) Performancé of an assigned piece, to be prepared within an hour.

(c) Sight reading and transposition of an easy piece not more than one tone higher or lower.

(d) For Violinists: Performance of an easy piece or a part of an easy quartette on the viola.

(e) For Violin and Violoncello: Analysis and performance of each part of a given quartette or trio to be assigned within 24 hours.

(f) Theory: Knowledge of four-part harmony (without double Counterpoint), Modulation Forms (Analysis).

(g) At the piano, the mastery of at least a Mozart Sonata is required.

(h) History of Music: Familiarity with the outlines of the History of Music, particularly that of the instrument studied, and of its leading masters and principal works.

(i) Knowledge of instruments, outline of the history of the instrument studied.

Conductor's School

(a) Theoretical Examination:

(1) Examination of Ear.

(2) Score sight reading.

(3) Sight Playing (Songs, Arias, and Concert with Soloists).

(4) Transposition.

(5) Modulation.

(6) Knowledge of Instruments.

(7) Explanation of all Instruments generally used in a Modern orchestra.

(8) Old Music.

(9) History of Music.

(10) Forms (Theory).

(11) Analysis of a piece chosen by the applicant (Sonata, symphony, oratorio.)

(12) Performance of a piano piece chosen by the applicant and of an assigned Piano piece.

Four weeks prior to this examination, the Director will assign a piece for instrumentation by the student. This piece must be handed in two days before the examination. After this theoretical examination will

follow the preparation, within a time limit of three hours under observation, of a score to be played on the piano in the afternoon.

(b) Practical Examination:

- (1) Performance of the prepared score on the piano.
- (2) Conducting of an orchestral or choral composition chosen by the applicant.
- (3) Sight-conducting.

Conducting with chorus or a singer.

6. *The examination shall include paper work and practical and oral examinations. The practical and oral examinations shall be held, as a rule, on two separate days.*

7. *Examinations in optional supplementary subjects shall follow the lines of examination in the major subjects.*

8. *Paper work will be given in the theoretical subjects. For the practical examination, a piece will be assigned to be prepared for performance within a time limit under observation.*

9. In all these examinations, no particular method or school of performance shall be favored, provided the results are satisfactory. All good methods of fingering will be accepted. Musical intelligence and initiative are the main essentials.

10. *Results of Examinations:*

The result of the examination is to be determined by the joint Board of Examiners. Deficiencies in major subjects can not be compensated on the system of average. In the branches of supplementary subjects an average may be struck between poor work in one subject and good work in another. Unsatisfactory work, however, can not be included in such average. The ratings in every subject are to be assigned as follows: Excellent, Very Good, Good, Satisfactory, and Unsatisfactory. Furthermore, a general estimate is to be pronounced which shall determine whether the examination has been passed or not.

In case of non-uniformity of opinion among the members of the examining board the result of the examination is to be determined by vote. Decision will rest on the conclusions of the majority. In case of a tie, the presiding member shall cast the deciding vote.

11. *Certificates:*

After a successful examination, the applicant shall receive the Graduation Certificate of the Conservatory. In this certificate the work done by the applicant will be described and the results of same will be recorded under the ratings, "satisfactory", etc. If the applicant has failed in his final examination, the Board of Examiners shall determine the earliest date at which he may submit to a re-examination. At the same time, it may be decided during the first examination that the applicant need not be re-examined in those subjects in which a grade of "good" has been assigned him.

12. Re-Examinations:

An applicant may be admitted for re-examination as a rule only twice. The procedure of the re-examination shall be the same as that of the first examination. As a rule, the whole examination is to be given again, with only such exception as are provided for in Rule 11.

13. A special syllabus, containing the groups of pieces which are to be taken into consideration for the different subjects, shall give information about all further technical details and procedures of the Graduation Examination. This syllabus, if possible, shall be worked out and printed every year.

GENERAL REGULATIONS

All branches of music shall be taught in the Conservatory, and students may select any one of these for their principal study. Students who take up the courses in composition, and pianoforte, may be required to take as secondary study any orchestral instrument which the Director may choose for them.

Students who are members of the orchestra or choir shall attend all orchestral and choral practices and rehearsals; and every student without exception shall attend all public performances whether or not he may be member of the orchestra or of the choir.

Students are strictly forbidden to take part in any public performances, or engage in any professional activity, as private professional engagement, and in publication of composition, without the written permission of the Director. A copy of each composition published by authority of the Director must be presented to the Conservatory Library.

COURSES OF INSTRUCTION**I. PIANO****FIRST YEAR***First Semester*

Piano method from Stamaty, Cesi, or Bayer Op. 101, Czerny Op. 599, Clementi Sonatinas.

Scales: C, G, and F major.

For examination: One Etude and a movement of a Sonatina.

Second Semester

Piano methods (continuation), Czerny Op. 599, Bertini Op. 100, Clementi Sonatinas.

A piece like Schumann's "Erster Verlust," "Trallerliedchen," "Choral."

Scales: C, G, D, F, B flat major; A, E, B, D, G minor.

For examination: One Etude and a movement of a Sonatina or a piece. Scales.

SECOND YEAR*First Semester*

Hanon Exercises, Bertini Op. 29, First Year Bach (A. Foote) or Bach Klavierbuchlein, Dussek or Clementi Sonatinas.

A piece like Beethoven's "Farewell to the Piano", "Variation in F," "Für Elise."

Scales: Until 3 sharps and 3 flats in major and minor.

For examination: One Etude, one movement of a Sonatina and a piece.

Second Semester

Hanon Exercises, Bertini Op. 29, First Year Bach (A. Foote) or Bach Klavierbühlein, Czerny Op. 636, Dussek or Clementi Sonatina.

A piece like Beethoven's "Easy Variations" in G major, Bartók "For Children" (Universal Edition No. 6892), Mozart "Rondo D major."

Scales: Major and minor until 4 sharps and flats.

For examination: One Etude, one movement of a Sonatina and one piece. Scales.

THIRD YEAR

First Semester

Hanon Exercises, Philipp 2nd book, Heller Op. 47, Bertini Op. 32, Czerny Op. 636, Kuhlau Sonatinas.

A piece like Burgmüller Op. 105, Kuhlau "Kinderleben" or Merkel "Butterfly."

Scales: All major and minor in two octaves.

For examination: One Etude, one movement of a Sonatina and one piece.

Second Semester

Hanon Exercises, Bertini Op. 32, Heller Op. 47, Berens Op. 61 and Op. 89 (for the left hand) Kuhlau Sonatinas (the more difficult), Haydn and Mozart easy Sonatas, Beethoven Rondo C major or Bagatelles.

A piece like Grieg "Dance Caprice," Bloch "Froche Kinder" (Universal Edition 8509-05) Schütt "Canzonetta."

Scales: All major and minor in 4 octaves. Arpeggios of the perfect chord.

For examination: One Etude, one movement of a Sonatina or sonata and one piece. Scales and Arpeggios.

FOURTH YEAR

First Semester

Czerny Op. 299, Berens Op. 61 and 98, Bach two part Inventions, Mozart Sonatas (excepting C major).

Grieg lyric pieces, Moszkowsky "Etude, Op. 18 No. 3," Paderewsky "Menuet."

Scales: In major contrary motion two octaves with its cadences Arpeggios of the perfect chords in major and minor.

For examination: One invention by Bach, one movement of a Sonata and one piece.

Second Semester

Czerny Op. 299, Cramer Etudes, Bach two part Inventions, Mozart Sonatas (excepting C and G major).

A piece like MacDowell "Woodland-Sketches," Casella "Pieces Infantines," Grieg Lyric Pieces, Chopin Valse or Mazurka.

Scales: All major and minor in contrary motion two octaves with its cadences. Arpeggios of the perfect chord in major and minor in all positions.

For examination: One Etude, one invention from Bach, one movement of a Sonata and one piece. Scales with cadences and arpeggios.

FIFTH YEAR

First Semester

Plaidy Exercises, Cramer Etudes, Moscheles Op. 70, Bach 3 part Invention or French suites, Beethoven Sonata No. 1, 5 or 9 (1st movement).

A piece like Mendelssohn "Song without Words", Schubert "Impromptus."

Scales: All major and minor in thirds. Arpeggios—all perfect chords in major and minor with their inversions.

For examination: One Bach, one movement of a Sonata, and one piece.

Second Semester

Plaidy Exercises, Moscheles Op. 70, Bach's 3 part Inventions or French Suites, Beethoven Sonatas No. 1, 5 or 9 (complete).

A piece like Liszt "Consolations" Missler "6 Little Valzes" (Universal Edition No. 5591), Takacs' "Oriental Lullaby".

Scales: All major and minor in third and sixth. Arpeggios—all perfect chords in major and minor with their inversions.

For examination: One Etude, one Bach, one Sonata (complete) and one piece. Scales and Arpeggios.

SIXTH YEAR

First Semester

Plaidy Exercises, Clementi-Tausig "Gradus ad Parnasum", Czerny Op. 740, Kullak School of Octaves, book II, Bach's "The Well-tempered Clavichord", Beethoven Sonatas No. 6, 7, 10 or 25 (1st movement).

A piece like Schumann, "Arabesque," Chopin "Nocturne" (G minor, E major), Rachmaninoff "Valse," Barcarolle, "Elegie".

Scales: All major and minor in thirds contrary motion. Arpeggios Dominant seventh.

For examination: Bach one Prelude and Fugue, Beethoven Sonata (1st movement) and one piece.

Second Semester

Czerny Op. 740, Clementi-Tausig "Gradus ad Parnasum, Kullak School of Octaves, book II, Bach "The Well-tempered Clavichord". Beethoven Sonata 6, 7, 10 or 25 (complete).

A piece like Debussy "Arabesque," "Clair de Lune." Takacs' "Humoresque," Chopin "Fantasie-Impromptu," Albeniz "Córdoba".

Scales: All major and minor in third and sixth contrary motion. Arpeggios—dominant and diminished seventh.

For examination: One Etude, one octave-study, (except No. 3) one Beethoven Sonata (complete) and one piece. Scales and Arpeggios.

SEVENTH YEAR

First Semester

Pischna Exercises, Kessler Etudes, Mozzkowsky 15 Etudes, Bach's "The Well-tempered Clavichord". Beethoven Sonatas No. 2, 3, 4, 8, 11, 12, 13, 14, 15, 16, 17, 18 or 24.

A piece like Schumann "Novelettes," "Fantasiestücke," Chopin "Polonaises," Glinka-Balakirew "The Lark," Liszt-Alabjew "LeRossignol," C Scott "Lotusland," Debussy "La Cathedral Engloutie," Ravel "Pavane".

For examination: One Sonata and one piece.

Second Semester

Kessler Etudes, Chopin Etudes, Bach "The Well-tempered Clavichord, one classic concerto.

A piece like Brahms "Capriccio" "Rhapsodies," Schumann "Papillons," Liszt "Hungarian Rhapsodies" No. 6, 11 or 13, Debussy "Jardins sous la Pluie".

For examination: One concerto, and one piece.

EIGHTH YEAR

First Semester

Chopin Etudes, Bach "The Well-tempered Clavichord", Beethoven Sonatas (See 7th Year).

Pieces like Chopin "Polonaise Op. 53", Chopin "Ballads", Schumann's "Carnival de Vienne, Op. 26", Marx "Albumblytt", Rachmaninoff "Prelude in G minor", Liszt "Hungarian Rhapsodies", Debussy "Danse", Suite Bergamasque.

For examination: One Etude, one Bach, and one piece.

Second Semester

For study and examination:

- Two Preludes and Fugues from Bach
- One Sonata by Beethoven
- Two Chopin Etudes
- One Piano Concerto
- Three pieces of romantic or modern masters

PIANO AS A SECONDARY SUBJECT

FIRST YEAR

First Semester.

All major and minor scales, 4 notes at M. M. 108.

All major and minor arpeggios, hands together, 4 notes at M.M. 69.

Must have completed at least five etudes from Czerny, Op. 299, Cramer, Jensen, Bach Inventions, Bach Little Preludes and Fugues or works of similar grade.

Must play one easier movement of Haydn, Mozart or Beethoven, (not Opus 49), and one composition of Mendelssohn, Schubert, Grieg, Schumann, Jensen, etc., from memory.

Second Semester

All major and minor scales, 4 notes at M.M. 120.

All major and minor arpeggios, 4 notes at M. M. 80.

Must have completed at least five additional etudes from composers listed under first semester above.

Must play one movement of a sonata by Mozart or Beethoven and from memory another composition of greater difficulty than required in first semester.

SECOND YEAR

First Semester

All major and minor scales, 4 notes at M.M. 126.

All major and minor arpeggios, 4 notes at M.M. 88.

Must have completed at least seven standard etudes of advancing difficulty.

Must have studied one entire sonata, Mozart or Beethoven, and must play one movement in sonata form for examination. Must play one composition of standard composer from memory.

Second Semester

All major and minor, 4 notes at M.M. 132.

All major and minor arpeggios, 4 notes at M.M. 100.

Must have completed at least 7 additional etudes during the semester.

Must play from memory an entire sonata by Mozart or Beethoven or any movement from it as directed by the Examination Committee, and one additional composition of similar technical grade.

SUITABLE PIANO PIECES FOR GRADUATION EXAMINATIONS
AND CONCERTS

Herewith is a list of pieces which are suitable for graduation examinations and concerts. Some of these pieces may serve as substitutes for Etudes. Of each rubric at least one piece should have been selected and prepared for performance.

1. J. S. Bach: One-, three-, four- or five-part fugue with prelude of the Well-Tempered Piano. Partitas in B major, C minor, or G major. English Suites in F major or D minor, A minor, G minor, E minor. A

minor Fugue (Theme with the simi-quaver notes). Italian Concert Chromatic Fantasie and Fugue.

2. Haydn: Sonatas, E flat major (Peters No. 1), E flat major (No. 3), A flat major (No. 8), F major (No. 20), E flat major (No. 29). Andante con variation in F minor. Fantasie in D major.

Mozart: Sonata, E major (Peters No. 1), B major (No. 4), A minor (No. 7), D major (No. 13), B major (No. 17), C minor (No. 18).

3. Beethoven: Sonatas, A major and C major (Op. 2), E flat major (Op. 7), C minor (Op. 13), M major (Op. 22), E flat major and C sharp minor (Op. 27), D major (Op. 28), G major, D minor and E flat major (Op. 31), C major (Op. 53), F major (Op. 54), F minor (Op. 57) F sharp major (Op. 78), E flat major (Op. 81), E minor (Op. 90).

4. Schubert: Impromptu (Op. 90), Nos. 1, 2, 3, 4. Musical Moments (Op. 94), Nos. 1-6, Op. 142, Nos. 3 and 4.

Mendelssohn: Songs without words E major (No. 1), E flat major (No. 7), H minor (No. 10), E flat major (No. 13), E major (No. 15), A minor (No. 17), A flat major (No. 18), A flat major (No. 19), E flat major (No. 20), G minor (No. 21), G major (No. 25), A major (No. 30), E flat major (No. 31), F major (No. 37), A major (No. 47). Op. 7 Loicht u. luftig, Rondo capriccioso (Op. 14). Troise caprices (Op. 33). No. 1, 2, 3, Fantasie in F sharp minor (Op. 28), Serious Variation (Op. 54), Prelude and Fugue (Op. 35), No. 1. Andante con variazioni (Op. 82). Scherzo a capriccio, F sharp minor.

Schumann: Papillons (Op. 2), Intermezzi (Op. 4), Davidsbündler (Op. 6), Carnival (Op. 9), Fantasiestücke (Op. 12), Kreisleriana (Op. 16), Arabeske (Op. 18), Noveletten (Op. 21), Nos. 1, 4, 7. Nachstücke (Op. 23), No. 4, Faschingsschwank (Op. 28), F sharp major Romance, Sonatas, Symphony Etudes.

5. Chopin: Etudes Op. 10 and Op. 25. Nocturnes B minor (Op. 9, No. 1), F sharp major (Op. 15, No. 2) C sharp minor (Op. 27, No. 1), D flat major (Op. 27, No. 2), B major and A flat major (Op. 32, Nos. 1 and 2), G major (Op. 37, No. 2), C minor and F sharp minor (Op. 48, Nos. 1-2), F minor (Op. 55, No. 1), Prelude in G major (No. 3), B minor (No. 6), F sharp major (No. 13), D flat major (No. 15), B minor (No. 6), A flat major (No. 17), B major (No. 21), F major (No. 23).

Berceuse: Impromptus A flat major, C sharp minor, F sharp major Variations (Op. 12). Balladon Scherzi. Polonaisen C sharp minor, C minor, F sharp minor, A flat major, Fantasie in F minor.

6. Liszt: Liebestraum, No. 3, Walderrauschen, Gnomenreigen, Etude D flat major, Campanella, Foux follets, Rhapsodie No. 13.

Brahms: Scherzo in E flat minor, Ballad in D major (Op. 10), Capriccio B minor (Op. 76), Intermezzi (Op. 117), Ballad in G minor (Op. 115), Intermezzo in E flat minor (Op. 118), Rhapsodies in B minor, G minor, F flat major.

Tschaikowsky: Romance in F minor, Variations in F major.

Grieg: Holberg-Suite.

7. At least one of the following Piano Concertos:

Mozart: D major, D minor, A major, C minor.

Beethoven: C major, B major, C minor, G major, E flat major.

Weber: Concert Piece in F minor.

Mendelssohn: G minor, F minor.

Schumann: A minor.

Chopin: E minor, F minor.

Brahms: D minor and B major.

Liszt: E flat major.

Saint Saens: G minor.

Rubinstein: D minor.

Tschaikowsky: B minor.

Grieg: A minor.

II. VIOLIN

PREPARATORY DEPARTMENT

Young Beginners' Grade

METHODS: Alard, Book I; L. Schubert, Op. 50, Bk. I; De Beriot, Bk. I; Maia Bang, Violin Method in Five parts. Pieces in the First Position such as E. Schmidt's Melancholie (on 2 strings), Ballade (on 3 strings), Romance and Valse.

First Elementary Grade

Blumenstengel Studies, Bk. I; R. Hofmann, Op. 25, II; Wohlfart, Op. 25, Bk. I; Sitt, Op. 32, Bk. I; Hollander 24 Easy Melodious Studies; Dancla, Easy Melodious Studies, Bk. I; Pieces in the First Position such as F. Stalberg's Petite Gavotte; G. Saenger's "The Little Chatterbox"; L. Oehmler, Rustic Dance.

Second Elementary Grade

Alard, Bk. II; R. Hoffmann, Op. 25, Bk. III; M. Schoen, Op. 22, Bk. II; Wohlfart, Op. 45, Bk. II; A Blumenstengel Scales and Arpeggios in the First Position; Pieces in the First Position; Easy Sonatinas and Concertos in the First Position, such as Sitt in C and F; Seitz Concerto in G; Maia Bang, Violin Method in Five Parts.

Junior Grade

Alard, Bk. III; Studies by Kayser, Op. 20, Bk. I; Sitt, Op. 32, Bk. II; Sevcik School of Violin Technics, Bk. I; Schradieck Scale Studies; Pieces in the First and Third Positions such as C. Kriens' Happy Spring; D. Hochstein Minuet in Olden Style; Solos by Leonard, Sitt, Gabrielli, David. Easy Sonatinas and Concertos.

First High Grade

Kayser, Op. 20, Bk. II and II; Dont Ch. A. Blumenstengel Scale and Arpeggios Studies, Bk. II; Maia Bang, Violin Method in Five Parts; Pieces in the First, Second and Third Positions. Easy Sonatinas and Concertos; Sonatas by Corelli, Op. 5, Bk. II; Senallié; Francoer; Easy Sonatas by Handel.

Second High Grade

Schradieck Scale Studies in Three Octaves; Mazas, Op. 36, Bk. I; Kayser, Op. 67—(Study of the positions); Sitt, Op. 32, Bk. III—(Study with change of positions); Pieces such as Massenet Meditation de Thais; Martini-Kreisler Andantino; Elgar, Salut de amour; Concertos: de Beriot Concerto No. 1; Rode Concerto Nos. 4 and 6; Sonata by Corelli, Op. 5, Bk. I; Viotti Concerto No. 23.

Third High Grade

Mazas, Op. 36, Bk. II—Scales in 3 octaves Dont, Op. 37—Sevcik School of Bowing, Bk. I; Maia Bang, Violin Method in Five Parts; Pieces such as Raff Cavatina; Schubert L'Abeille, Wieniawski, Kuwiauak; Arenski Serenade; Svendsen, Romance; Mlyrnaski, Mazurka; Concertos such as Sitt, Op. 108 in D minor; Accolay, Concerto in A minor; Viotti, Concertos Nos. 24 and 28; Rode, Concerto No. 7; Sonatas by Veracini and Leclair.

Fourth High Grade

Studies by Kreutzer (Famous 42); De Beriot Etudes de Concert, Bk. I, Op. 123; Rovelli 12 Caprices; Mazas, Bk. III; Pieces such as Sarasate Les Adieux; Wieniawski Legende; Hauser, Hungarian Rhapsodie; Mackensie, Benedictus; Sonatas such as Nardini in D; Mozart Sonatas; Concertos such as Viotti No. 17; De Beriot from No. 1 to 5; De Beriot, Scene de Ballet; Accolay Concerto E minor; Kreutzer No. 13; Rode Concerto No. 8; Viotti, Concerto No. 29.

REGULAR CONSERVATORY DEPARTMENT*First Year*

STUDIES: Dont, Op. 35; Kreutzer; De Beriot, Op. 123, Bk. I; Concert Etudes, Bk. II; Danccla, Op. 78; Scales in Three octaves and double-stops; Kross, Op. 40, The Art of Bowing; Maia Bang, Violin Method in Five Parts; Pieces such as Paganini Moto Perpetuo; Chopin-Sarasate Nocturne in E flat; D'Ambrosio, Romance; Hubay "Heyre Kati;" Tartini Sonata in G minor; Concertos such as De Beriot Nos. 6 and 9; Bach Concerto in A minor; Mozart No. 4 in D; Kreutzer No. 18; Viotti Concerto No. 17; Spohr Concerto No. 9 and No. 7; Beethoven Two Romances.

Second Year

STUDIES: Leonard, Op. 21, Classic Studies; Fiorillo 36 Studies; De Beriot, Op. 123, Bk. II; Scales in three octaves; Scales in double-stops; Arpeggios in three octaves; Sevcick School of Violin Technics, Bk. II; Maia Bang, Violin Method in Five Parts; Bach Sonatas for Violin alone; Handel Sonatas; Standard Concert Pieces such as Vieuxtemps Ballade et Polonaise and Fantasia Appassionata; Concertos: Godard in A minor; De Beriot No. 7; Moliere in A minor; Papini "The Firefly;" Viotti, Concerto No. 22; Spohr Concerto No. 8, 2, and 11; Kreutzer Concerto No. 19; Rode No. 11; Vieuxtemps Grand Concerto in D minor.

Third Year

STUDIES: Campagnoli Seven Divertimenti; De Beriot Op. 123, Bk. II; Scales in double-stops and octaves; Alard 24 Etudes Artistiques; Rode 12 Etudes; Maia Bang, Violin Method in Five Parts; Pieces such as Wieniawski *Airs Russes*; Drigo-Auer *Valse Bluettes*; D'Ambrosio *Humoresque*; Sarasate, *Gypsy Airs*; Concertos; Mendelssohn in E minor, Bruch in G minor; Wieniawski in D minor; Sarasate *Caprice Basque*; Saint-Saens *Rondo Capriccioso*; Sarasate, *Faust Fantasie*; Grieg *Sonata in G minor*; Bach *Praeludium* from the 6th *Sonata in G minor*; Bach *Fugue in A major*.

Fourth Year

STUDIES: Gavinies 24 Etudes; Paganini 24 Caprices; Wieniawski *Ecole Moderne*; David *Violin Harmonics and Pizzicato*; Maia Bang, Violin Method in Five Parts; Bazzini *Etude de Concert in D major*; Scales in Fingered Octaves and Tenths; Pieces such as Sarasate *Jota Navarra* and *Malagueña*; Elgar *Le Capricieuse*; Wieniawski *Polonaise in A and D major*; Kreisler *Tamburin Chinois*; Bazzini *Ronde des Lutins*; Lalo *Symphonie Espagnole*; Concertos; Paganini *D major (in one Movement)*; Saint-Saens in B minor; Beethoven *Concerto*; Dvorak, Brahms, Tchaikowsky. Sonatas by Brahms and Cesar Franck; *Tartini Devil's Trill*; Bach *Chaconne*.

SUITABLE VIOLIN PIECES FOR GRADUATION EXAMINATION AND CONCERTS

Herewith is a list of pieces which are suitable for graduation examinations and concerts. Some of these pieces may serve as substitutes for Etudes. Of each rubric at least one piece should have been selected and prepared for performance.

1. J. S. Bach: Six Solo Sonatas. Violin Concert, A minor, D major, E major. G. Fr. Handel: Sonatas in F major and A major.

2. Tartini: Sonata in G minor, *Teufelstriller*. Fr. W. Rust: Sonata in D minor. Viotti: Concert in A minor and E minor. Rode: Concert in A minor, E minor and D major. Kreutzer: Concert in D major.

3. Mozart: Violin Concert.

4. Paganini: Concert in D major, *Moto Perpetuo*, *Di tanti palpitti*, *Le steghe*. De Beriot: Concert in D major, G major, E major and A minor. Various *Airs*, *Ballets*, *zeno*. Bazzini: Concert in D major. Scherzo A minor, *Ronde des Lutins*. Molique: Concert in A minor. Ernst: Concert in F sharp minor. *Elegy*. *Othello-Variationen*, *Nocturnes Op. 8 and Op. 25*. Lipinsky: Military Concert.

5. Spohr: Concert in D minor and E minor. *Cosangzone*.

6. Wieniawsky: Concert in D minor, *Polonaise in A major*, *Faust-fantasie*, *Legende*, *Scherzo Tarantelle*. Vieuxtemps: Concert in E major, A major, D minor, *Reverie Veix intimes (Op. 45)*. Saint-Saens: Concert in H minor, Concert piece in A major. *Ronde capriccioso*. Sarasate: *Zigeunerweisen*, *Faust Fantasie*. Tschwaikowsky: *Serenade melancolique*.

7. At least one of the following Concerts:

Beethoven: D major.

Mendelssohn: E minor.

Bruch: G minor and D minor.

Joachim: G major.

Tschaikowsky: D major.

III. THE VIOLIN ENSEMBLE

The Violin Ensemble Class provides not only practice in sight-reading, but also the technical preparations requisite for admission to the Conservatory Orchestra. Through the medium of the standard orchestral works chosen for study, students of violin and viola are given thorough instruction in the general principles of bowing and fingering, and practice in rhythm, attack and nuance, while experience is afforded in playing under a conductor.

All violin students of the Regular Conservatory Department and those of the Fourth Year of the Preparatory Department who are found fitted for attendance at this course are required to attend the Class.

All violin pupils must attend the Violin Ensemble Class for at least one school year before being eligible to the Conservatory Orchestra.

IV. VOICE CULTURE

Instruction should be based primarily upon the Italian school for training the voice. Correct placement, enabling the pupil to produce tones throughout all registers with ease and with a firm, even quality, is the foundation of good singing. The vocal department is aided by the classes for ear-training, harmony and other subjects so necessary to the well-grounded education of a singer.

Students are given opportunities to appear publicly, thus fitting them for the concert stage, and for church and oratorio work.

CURRICULUM

First Year

- I. Classification
- II. Deportment.
 - A. Posture
 - B. Breathing
- III. Tone—Placement.
 - A. Vocalizes for double purpose.
 - 1. Development of voice—
 - a. Short scales
 - b. Small arpeggi
 - c. Intervals (major and perfect)
 - 2. Clear diction—
 - a. vowels
 - b. syllables
 - c. words

- IV. Repertoire
 - A. One Simple Ancient Italian Classic
 - B. Concone

- V. Language
 - A. Italian

- VI. Piano
 - Solfeggio—Concone

Second Year

- I. Tone Placement.
 - A. Vocalizes—
 - 1. Discipline of pupil in refinement of tone in diction.
 - 2. Solfeggio of advanced nature.
 - a. Marchesi—Concone—Rossini Panzeron

- II. Ear Training
 - A. Sight Singing
 - B. Elementary Harmony

- III. Languages—
 - French

- IV. Repertoire
 - A. Simple Songs
 - 1. Italian
 - 2. English
 - 3. German

Third Year

- I. Tone Placement—
 - A. Extension of range
 - B. Increase in volume
 - C. Increase in power to modulate tone
 - 1. Intensity
 - a. Plane
 - b. M. Forte
 - c. Forte
 - 2. Agility
 - a. Ornamentation
 - 1. Possible trill
 - 2. Staccato

- D. Interpretation.

- II. Languages.
 - A. French
 - B. Continued Study of Italian, English and German

- III. Ear Training—
 - A. Sight Reading
 - B. Duet, trio and quartet singing

- IV. Piano
 - A. Technique
 - B. Sight Reading
 - 1. Simple accompaniment

- V. Repertoire
 - A. Simple Aria from—

1. Opera
2. Oratorio
- B. Studying Romantics in
 1. German
- C. Modern Song
 1. Italian
 2. French

Fourth Year

- I. Interpretation
 - A. Recitative—
 1. Opera
 2. Oratorio
 - B. Aria of maximum difficulty
 1. Classics or Ancients
 - a. Bach, Haydn, and Handel
 - b. Lully, Rameau, Gounod
 2. Romantics
 - a. Beethoven, Weber
 3. Bel Canto
 - a. Bellini
 - b. Donizetti
 - C. Songs (Modern)
 1. All languages
 - D. Studying of one entire act
- II. Languages
 - A. Review of languages
- III. Piano
 - A. Reading at Sight any simple accompaniment.

Fifth Year

- I. Repertoire
 - A. Advanced Interpretation.
 1. One entire role in each of 3 operas
 - a. Classic, Romantic, Modern
 2. Songs in original language
 - a. Ancient
 - b. Modern
 - c. Oratorio acc. by full orchestra
 - B. Practice Teaching

Sixth Year

POST GRADUATE COURSE
OF GRAND OPERA

- I. Opera
 - A. Stage deportment
 - B. Stage technique
 1. Gestures
 2. Facial expression—make up

- C. One act of opera complete from memory accompanied by full orchestra.

POST-GRADUATE COURSES

For those who have obtained the Graduation Certificate, Special Post Graduate Courses are to be established leading to Post Graduate Diploma. This will be issued only to those who show real fitness for a virtuoso career. The candidates (for an instrumental or vocal diploma) shall be obliged to give a finished and satisfactory public recital, the detailed conditions of the requirements to be fixed in the curriculum. (See page 33)

V. THEORY AND COMPOSITION

RUDIMENTS OF MUSIC

This course covers one year.

Recommended for reference: H. Heale—A short Treatise on the Rudiments for Music. Prof. F. Niecks—Introduction to the Elements of Music. Franklin Peterson—Elements of Music.

HARMONY

The course in harmony covers two years.

The text-book is Chadwick's Harmony, with which is combined the text-book Additional Exercises by Benjamin Cutter. According to this system the student from the beginning is required to harmonize melodies in the soprano and in the bass with the principal triads of the scales.

The examinations for advanced standing in Harmony given by the Conservatory require such exercises to be worked out both on paper and at the keyboard. In the class, exercises not only are corrected, but also are worked out on the blackboard under the supervision of the instructor. Alternate lessons are devoted to keyboard work, and all exercises must be practiced at the keyboard as well as written on paper.

As the whole course is preliminary to the study of composition, the student is encouraged from the beginning to make attempts at composition and to bring original exercises in addition to his class work.

First Year

Harmony 1a—All triads in major and minor modes and dominant seventh, and their inversions.

Harmony 1b—Dispersed harmony, dominant ninth and leading tone seventh chords, with inversions; modulation, secondary seventh chords and their inversions.

Second Year

Harmony 2a—Chromatic passing-tones; augmented and altered chords, enharmonic changes; irregular resolutions of the dominant seventh; modulation concluded.

Harmony 2b—Non-harmonic tones; melodic figuration, accompaniments; the figured chorale.

Advanced Harmony.—The figured chorale, contained; polyharmony, sequences; progressions of tonic chords; the whole-tone scale; the enharmonic scale; modulation (continued.)

Textbooks: *Harmony*, Chadwick; *Additional Exercises*, Cutter.

Recommended for reference: *Harmony; Its Theory and Practice*, Prout; *Harmony*, Stainer; *Modulation*, Foote.

COUNTERPOINT

1st Semester

Review of Intervals. Laws of melody writing—association of two melodies using the fundamental intervals and exceptional intervals. Rhythmic Diversity, two, three, and four notes to each beat—Modulations—shifted rhythm.

2nd Semester

Diversity of rhythmic movements in the two parts. Motive development. Imitation. The small invention. Three part harmony, melody harmonization with primary and secondary chords, Modulation, diatonic and chromatic, and altered steps. Contrapuntal harmony up to 4 parts. Analytical Counterpoint.

Textbook: Goetchius *Elementary Counterpoint*.

HARMONIC ANALYSIS

The course in Harmonic Analysis covers one year, and all candidates for graduation except those for graduation in Voice Culture are required to attend the class during or before the last year of their course. (This course is, therefore, obligatory secondary subject for all students of the instrumental courses in the Regular Conservatory Department.) In these lessons, and so far as is possible for the noncomposing student, Harmony is discussed from the standpoint of the composer—Harmony of itself and in its application to effective musical form. The many devices employed by the composer are taken up one by one and considered, the principles governing them are stated, and by a series of carefully graded lessons the student is carried over the harmonic material of the past and of the present. This course is invaluable to all those who expect to become teachers in any field, as it enables them to explain in all their details the construction of musical compositions.

1st Semester

Chords and chord formation, and their figures. Diatonic harmony. The chromatic scale, melodic, and harmonic. The chromatic elements, modulations with and without confirmations. The enharmonic chords, the major—minor chords. The Augmented sixth chords.

2nd Semester

The unessential notes. Their specific names. The passing chords—abrupt modulations. Analysis of classic and modern works. Harmonic Analysis of contrapuntal works. Form analysis. Psychoanalysis of melodies and chords.

Textbook: L. B. Prout's *Harmonic Analysis*.

FORM AND ANALYSIS

The course of Form and Analysis covers one year and all candidates for graduation except those for graduation in Voice Culture are required to attend these courses. (For the students of Instrumental Classes of the Regular Conservatory Department, they are obligatory secondary subjects.)

1st Semester

The elements of form. The motive, section, phrase and period. The extension and contraction of phrases. The single period; the double period, the song form. The analysis of Mendelssohn's "Song Without Words".

2nd Semester

The Grand Bass, the Chaconne, the Variation Form, formal, free, and the double or "Lesagreements". The Rondo (1st, 2nd, and the Sonata Rondo). The Cyclic forms. The Suite, the different dances. The Sonata-Allegro form. The binary and ternary form. The mixed forms. The Indefinite forms. Analysis of Bach fugues, Beethoven and modern sonatas, symphonies, symphonic poems, etc.

Textbook: E. Prout Musical Forms.

SOLFEGGIO

The course of solfeggio may be taken up in the first, second and third year of the Preparatory Department. A grade of "3" (satisfactory) is necessary for graduation. Pupils who can not obtain this mark after three years of study (in the first, second and third year of the Preparatory Department) have to continue these courses longer.

Solfeggio 1a.—Rhythmic notation; measure; figures derived by combination and division of simple units, normally and abnormally; three against two. Tonal notation and relations; intervals and inversions; chromatic alteration; enharmony; triads; diatonic scales; tonality; signatures. Music reading, writing; dictation, rhythmic and melodic.

Solfeggio 1b.—Principal combinations and divisions of simple and compound measures, normal and abnormal. Two against three; four against three. Irregular measure. Intervals, triads, seventh chords; inversions. Chromatic notation; all chromatic scales. More advanced music reading and writing; dictation; rhythmic, melodic and harmonic.

Textbook: Danhauser—Vol. I

Lavignac—Solfeges Manuscripts. Ear Training.

Exercices journaliers de Solfège, Part I, Paul Rougnon; Etudes de Solfège, Book II, Colomer. Thirty Lessons in Solfeggio.

Solfeggio 2a.—Complicated rhythms. More advanced tonal relation. Studies involved Do, Fa and Sol clefs. Sevenths chord and inversions. Change of measure and of tempo. Melodic and harmonic dictation; transcription.

Solfège des Solfèges, Danhauser and Lomoiné. Thirty Lessons in Solfeggio.

Solfeggio 2b.—Rhythmic training extended. Sevenths chords completed. Altered chords. All clef positions. Change of clef, transposition. At the completion of the course, students will be required to read fluently with all clef positions, and to transpose with facility.

Ninety (90) Lecons mélodiques, Book II, Duvernoy; *Solféges Manuscrits*; Op. 33 (1 and 2), Lavignac.

Solfeggio 3. Textbook—Danhauser—Vol. II La vignac—Solfeger manuscripts Ear Training and Transposition.

THEORY OF MUSIC

The course of theory covers a period of one year. This course summarizes the knowledge necessary to every teacher and professional musician. It enables the student to analyze intelligently the form of the music which he plays and teaches, and provides the necessary foundation in whatever field he may afterwards enter, whether of teaching or of artistic performance. It is also indispensable to those who intend to study composition. The lecture courses in Musical History and Musical Appreciation are designed to supplement the work of the Theory Course.

Admission to the Theory Course will be granted only to students who have completed at least the first year of the course in Harmony.

1st Semester

Acoustics—vibrations, tone production, classification of vibrations, the tempered scale. Different pitches. The Orchestra.

2nd Semester

Notation, description of the different courses for the general musicianship. The vocal forms—sacred and secular.

Textbook: Elson's Theory.

HISTORY OF MUSIC

The course of Musical History covers a period of two years. This course presents a general survey of the rise and progress of Music, together with a more detailed study of the development of the great art-forms. They will be illustrated from time to time by selections from the works of the composers under discussion, the principal aim being to furnish the student with a general knowledge of his art upon which to base further studies in the appreciation of music.

Text: History of Music—Baltzell.

Reference books: A History of Music, Stanford and Forsyth; The History of Music, Pratt; The Oxford History of Music; the Evolution of the Art of Music, Parry; Catechism of Musical History, Riemann.

VI. ENSEMBLE COURSES

Ensemble Classes for Stringed Instruments and Pianoforte.

The study of the classic and modern repertoire of chamber music, including sonatas and trios, quartets and works for larger combinations of instruments, with and without pianoforte, is a refining and educating influence whose value is inestimable.

Attendance upon this course is obligatory for all members of the Regular Conservatory Department in pianoforte, violin, and violoncello and for those students of the fourth year of the Preparatory Department who are found fitted for attendance at this course. Classes meet for one hour weekly.

INSTRUMENTAL ENSEMBLE IN PIANO

Students majoring in piano are required to take instrumental Ensemble a part of each school year throughout the course.

Piano duet playing for purposes of sight-reading and rhythmic feeling, and later have the opportunity of work with various combinations of stringed instruments.

Piano students desiring to compete for public appearance with orchestra should have some experience in ensemble playing.

Outline of Courses

Piano duet playing for purposes of sight-reading and rhythmic feeling.

Four-hand piano arrangements of the simpler overtures and symphonies, with addition of stringed instruments.

Four-hand piano arrangements of the more important classical overtures and symphonies, with the addition of stringed instruments.

Chamber music and modern orchestral music.

Pianoforte Sight-playing.—This course is open to students of the fourth year of the Preparatory Department who are found fitted for attendance and to students of the Regular Conservatory Department.

Lessons are given in classes of five, and special attention is given to rhythm, embellishments, accompaniments, and transposition.

Elementary pieces.

Sonatas by Clementi, Haydn, Mozart, and others.

Abbreviations and ornaments. C clefs in one part. Intermediate pieces and accompaniments.

Transposition and score—reading; C clefs in three parts.

Pianoforte Accompaniment.—Study in the art of playing piano accompaniments. Practical work under supervision, with singers, violinists, and other instrumentalists. The materials for the course is chosen from the standard concert and recital repertoire of songs and arias and solos for orchestral instruments. Pupils are given thorough instruction in the principles and practice of the art of accompaniment, and in interpretation. Actual practice is afforded both in the class and in the recitals and public concerts of the Conservatory.

Quartet and Trio Classes.—This class affords training and experience in the most exacting field of all ensemble playing. The repertoire studied is chosen, as in the Ensemble Classes, from the standard classical and modern works for trio, quartet and quintet of stringed instruments. All candidates for graduation in the Violin and Violoncello Courses are required to attend this class for at least one year. One hour weekly.

VII. PRACTICE TEACHING

For the Graduation Certificate two years of practice teaching in the Conservatory, under supervision, are necessary. The Special Teacher's Training Course may cover a period of two years only, and may be entered the two last years of study before graduation in addition to the main subject.

VIII. THE CONSERVATORY CHORUS

Through the weekly rehearsals, strict training is provided in the fundamental principles of chorus singing, including accuracy of reading, clearness of diction, and elasticity of expression. The rehearsals are conducted mainly without accompaniment, and purity of tone and intonation, together with precision of attack and rhythm are especially cultivated. The repertoire studied includes unaccompanied medieval and modern church music, part-songs and secular chorusses, for women's voices as well as for mixed chorus; together with works with orchestral accompaniment.

All students in the Conservatory are required to attend the rehearsals of the Chorus, unless excused by the Director. For the purpose of acquiring the fundamental knowledge of singing technique, they must attend in this case, the first year of Voice Culture Study (offered in the Preparatory Department) without any extra cost to them. For those who expect to conduct chorusses or choirs participation in the work of the Chorus offers obvious advantages. One or two hours weekly.

Piano students taking courses in Practice Teaching and members of the Conservatory orchestra are however exempted in chorus.

GENERAL CURRICULUM

TEACHER'S COURSE

PIANO

First Year

First Semester

Piano (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.
 Rudiments 2 units
 Solfeggio One 2 units
 and Ear Training)
 Chorus 1 unit

Second Semester.

Piano (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.
 Rudiments 2 units
 Solfeggio One 2 units
 and Ear Training)
 Chorus 1 unit

Second Year

Piano (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.
 Harmony One 2 units
 Solfeggio Two & Ear
 Training 2 units
 Chorus 1 unit

Piano (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.
 Harmony One 2 units
 Solfeggio Two & Ear
 Training 2 units
 Chorus 1 unit

*Third Year**First Semester*

Piano (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Harmony Two	2 units
Solfeggio Three & Ear Training	2 units
History of Music One.....	1 unit
Chorus	1 unit

Second Semester

Piano (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Harmony Two	2 units
Solfeggio Three & Ear Training	2 units
History of Music One.....	1 unit
Chorus	1 unit

Fourth Year

Piano (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Counterpoint	2 units
Dictation One	1 unit
Theory of Music	2 units
History of Music Two	1 unit
Chorus	1 unit

Piano (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Counterpoint	2 units
Dictation One	1 unit
Theory of Music	2 units
History of Music Two	1 unit
Chorus	1 unit

Fifth Year

Piano (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Dictation Two	1 unit
Musical Forms	2 units
Harmonic Analysis	2 units
Chorus	1 unit

Piano (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Dictation Two	1 unit
Musical Forms	2 units
Harmonic Analysis	2 units
Chorus	1 unit

Sixth Year

Piano (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Keyboard Harmony	2 units
Sight Reading & Transposition I	1 unit
Chorus	1 unit

Piano (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Keyboard Harmony	2 units
Sight Reading & Transposition I	1 unit
Chorus	1 unit

Seventh Year

Piano (Principal Study) 40 minutes individual instruction, twice a week.	
Principles of Musical Interpretation & Analysis 1 ..	1 unit
Practice Teaching	2 units
Sight Reading & Transposition II	1 unit
Piano Ensemble One	1 unit

Piano (Principal Study) 40 minutes individual instruction, twice a week.	
Principles of Musical Interpretation & Analysis 1 ..	1 unit
Practice Teaching	2 units
Sight Reading & Transposition II	1 unit
Piano Ensemble One	1 unit

*Eighth Year**First Semester*

Piano (Principal Study) 45 minutes
individual instruction, twice a
week.
Practice Teaching 2 units
Piano Ensemble Two 1 unit

Second Semester

Piano (Principal Study) 45 minutes
individual instruction, twice a
week.
Practice Teaching 2 units
Piano Ensemble Two 1 unit

VIOLIN

First Year

Violin (Principal Study) 30 minutes
individual instruction, twice a
week or one hour a lesson in con-
junction with two other students.
Rudiments 2 units
Solfeggio One & Ear Train-
ing 2 units
Chorus 1 unit

Violin (Principal Study) 30 minutes
individual instruction, twice a
week or one hour a lesson in con-
junction with two other students.
Rudiments 2 units
Solfeggio One & Ear Train-
ing 2 units
Chorus 1 unit

Second Year

Violin (Principal Study) 30 minutes
individual instruction, twice a
week, or one hour a lesson in
conjunction with two other stu-
dents.
Harmony One 2 units
Solfeggio Two & Ear Train-
ing 2 units
Chorus 1 unit

Violin (Principal Study) 30 minutes
individual instruction, twice a
week, or one hour a lesson in
conjunction with two other stu-
dents.
Harmony One 2 units
Solfeggio Two & Ear Train-
ing 2 units
Chorus 1 unit

Third Year

Violin (Principal Study) 30 minutes
week, or one hour a lesson in
conjunction with two other stu-
dents.
Solfeggio Three & Ear Train-
ing 2 units
Harmony Two 2 units
History of Music One 1 unit
Chorus 1 unit

Violin (Principal Study) 30 minutes
individual instruction, twice a
week, or one hour a lesson in
conjunction with two other stu-
dents.
Solfeggio Three & Ear Train-
ing 2 units
Harmony Two 2 units
History of Music One 1 unit
Chorus 1 unit

Fourth Year

Violin (Principal Study) 30 minutes
individual instruction, twice a
week, or one hour a lesson in
conjunction with two other stu-
dents.
Counterpoint 2 units
Dictation One 1 unit
Theory of Music 2 units
History of Music Two 1 unit
Chorus 1 unit

Violin (Principal Study) 30 minutes
individual instruction, twice a
week, or one hour a lesson in
conjunction with two other stu-
dents.
Counterpoint 2 units
Dictation One 1 unit
Theory of Music 2 units
History of Music Two 1 unit
Chorus 1 unit

*Fifth Year**First Semester*

Violin (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Dictation Two	1 unit
Musical Forms	2 units
Harmonic Analysis	2 units
Orchestra	2 units
Violin Ensemble	1 unit

Second Semester

Violin (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Dictation Two	1 unit
Musical Forms	2 units
Harmonic Analysis	2 units
Orchestra	2 units
Violin Ensemble	1 unit

Sixth Year

Violin (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Orchestra	2 units
Violin Ensemble	1 unit

Violin (Principal Study) 30 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Orchestra	2 units
Violin Ensemble	1 unit

Seventh Year

Violin (Principal Study) 40 minutes individual instruction, twice a week.	
Practice Teaching	2 units
Orchestra	2 units
Chamber Music	1 unit
Violin Ensemble	1 unit

Violin (Principal Study) 40 minutes individual instruction, twice a week.	
Practice Teaching	2 units
Orchestra	2 units
Chamber Music	1 unit
Violin Ensemble	1 unit

Eighth Year

Violin (Principal Study) 45 minutes individual instruction, twice a week.	
Principles of Musical Interpretation & Analysis I ..	1 unit
Practice Teaching	2 units
Orchestra	2 units
Chamber Music	1 unit
Violin Ensemble	1 unit

Violin (Principal Study) 45 minutes individual instruction, twice a week.	
Principles of Musical Interpretation & Analysis I ..	1 unit
Practice Teaching	2 units
Orchestra	2 units
Chamber Music	1 unit
Violin Ensemble	1 unit

VOICE CULTURE

First Year

Voice (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Rudiments	2 units
Solfeggio One & Ear Training	2 units
Italian One	2 units
Chorus	1 unit
Piano (Secondary) 20 minutes individual instruction, once a week.	

Voice (Principal Study) 20 minutes individual instruction, twice a week, or one hour a lesson in conjunction with two other students.	
Rudiments	2 units
Solfeggio One & Ear Training	2 units
Italian One	2 units
Chorus	1 unit
Piano (Secondary) 20 minutes individual instruction, once a week.	

*Second Year**First Semester*

Voice—20 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Harmony One 2 units
 Solfeggio One & Ear Training 2 units
 Lectures in French 1 unit
 Chorus 1 unit
 Piano (Secondary) 20 minutes individual instruction, once a week.

Second Semester

Voice—20 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Harmony One 2 units
 Solfeggio One & Ear Training 2 units
 Lectures in French 1 unit
 Chorus 1 unit
 Piano (Secondary) 20 minutes individual instruction, once a week.

Third Year

Voice—20 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Solfeggio Three & Ear Training 2 units
 History of Music One 1 unit
 Harmony Two 2 units
 Dictation One 1 unit
 Lectures in French 1 unit
 Chorus 1 unit
 Piano (Secondary) 20 minutes individual instruction, once a week.

Voice—20 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Solfeggio Three & Ear Training 2 units
 History of Music One 1 unit
 Harmony Two 2 units
 Dictation One 1 unit
 Lectures in French 1 unit
 Chorus 1 unit
 Piano (Secondary) 20 minutes individual instruction, once a week.

Fourth Year

Voice—80 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Dictation Two 1 unit
 Theory of Music 2 units
 Lectures in German 1 unit
 Piano (Secondary) 20 minutes individual instruction, once a week.
 Chorus 1 unit
 Vocal Art & Literature 1 unit

Voice—30 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Dictation Two 1 unit
 Theory of Music 2 units
 Lectures in German 1 unit
 Piano (Secondary) 20 minutes individual instruction, once a week.
 Chorus 1 unit
 Vocal Art & Literature 1 unit

Fifth Year

Voice—80 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Lectures in German 1 unit
 Principles of Musical Interpretation & Analysis 1 unit
 Sight Reading & Transposition 1 unit
 Practice Teaching $\frac{1}{2}$ unit
 Chorus 1 unit

Voice—30 minutes individual instruction, twice a week or one hour a lesson in conjunction with two other students.
 Lectures in German 1 unit
 Principles of Musical Interpretation & Analysis 1 unit
 Sight Reading & Transposition 1 unit
 Practice Teaching $\frac{1}{2}$ unit
 Chorus 1 unit

SCIENCE AND COMPOSITION

The following subjects are required, in addition to the subjects prescribed for the Piano curriculum, for the completion of the Teacher's Certificate in Science and Composition.

Advanced Melodic and Harmonic Dictation	2 units (2 semesters)
Applied Counterpoint	2 units (2 semesters)
Theory of Modulation	2 units (2 semesters)
Harmonization and invention of melodies in different parts (Improvisation)	1 unit (2 semesters)
Technique of Musical Instruments	2 units (2 semesters)
Elementary Orchestration & Conducting	1 unit (2 semesters)
Academic Composition	(not less than 6 compositions)
Pratice Teaching	1 unit (2 semesters)

REQUIREMENTS LEADING TO THE TITLE OF BACHELOR OF MUSIC

ENTRANCE REQUIREMENTS

1. Teacher's Certificate in Music
2. High School Diploma

PIANOFORTE

FIRST YEAR

First Semester

- Scales:**
1. Chromatic scale, (a) parallel motion, in groups of four, two octaves, seven positions (root major and minor third, major and minor sixth, major and minor tenth). (b) contrary motion, in groups of three, two octaves, seven positions (as above).
 2. All major in double thirds, in groups of two, two octaves, in groups of three, three octaves, hands together, two octaves apart.
 3. All major in double octaves in groups of two, two octaves; in groups of three, three octaves.
- Etudes:** A brilliant one by Chopin and one from own choice (Chopin, Liszt, Henselt, Rubeinstein, etc.)
- Piece:**
1. A sonata of Beethoven, Op. 53 to Op. 111), or Chopin, Liszt, or Brahms sonata.
 2. A brilliant piece of the romantic or modern school (Chopin, Liszt, Brahms, Debussy, Ravel, etc.)

Second Semester

- Scales:**
1. Chromatic scales in minor double thirds, in groups of two and three, two octaves.
 2. All harmonic minor in double octaves, same as major (First semester).
 3. All harmonic minor in double octaves, same as major (First Semester).

Bach: C minor Fantasy or a Toccata, or a prelude and (4 voice) Fugue from the Well-Tempered Clavichord, or any larger Bach transcription (to be played from memory).

Piece: A standard concerto of advanced difficulty or a virtuoso piece that can serve as closing number on a recital program.

IMPORTANT NOTE: All technical works (Scales, Chords, Broken chords and Arpeggios) should be practised and presented in forte and piano, legato and staccato.

PUBLIC PIANO RECITAL

SECOND YEAR

First Semester

- Scales:** 1. All major and harmonic minor, two against three, three octaves, both forms, root position.
 2. Chromatic scales in major and minor double thirds, major and minor double sixths, double octaves (Three latter in seven positions in both parallel and contrary motion; all of these groups of two and three, two octaves).
- Etudes:** 1. One by Chopin and one from own choice (Chopin, Henselt, Liszt, Alkan, Rubinstein, Debussy, Scribine, Blanchet, etc.)
- Pieces:** 1. A brilliant piece by Liszt. (Legends, Tarantella, Henselt, Paganini, Etudes, etc.)
 2. A piece of lyrical character of the modern school. (Debussy, Ravel, Scarbine, etc.)

Second Semester

- Bach:** One Prelude and four or five voice, fugue from the Well-tempered clavier or a complete suite or Partita, or Two-Bach-Busoni Choral Preludes; or any large organ transcription including the fugue. Chromatic fantasy and fugue (to be played from memory).
- Pieces:** 1. One sonata of Beethoven (Op. 90 to Op. 111).
 2. A good sized, brilliant virtuoso piece (Legends, Tarantella, Paganinni, Etudes, etc.) that can be used as a closing number for a recital.

IMPORTANT NOTES: All technical work (scales, chords, Broken chords, and arpeggios) should be practised and presented in forte and piano, legato and staccato.

PUBLIC PIANO RECITAL

REQUIREMENTS LEADING TO THE DEGREE OF BACHELOR OF MUSIC IN VIOLIN

FIRST YEAR

First Semester

Scales: All major scales in three octaves. All major arpeggios (triads, broken chords, dominant chords). Chromatic scales in three octaves. All major scales in thirds, sixths, octaves, and tenths.

Studies: Six Gavinies, Dont, Op. 35, Vieuxtemps, or Wieniawski studies two to be played.

Second Semester

Scales All minor scales in three octaves. All minor arpeggios. (Triads, broken chord, dominant and diminished sevenths chords). All minor scales in thirds, sixths, octaves and tenths.

Sonata: One entire Bach sonata, for violin alone, Nos. 1, 2, or 6.

PUBLIC VIOLIN RECITAL

SECOND YEAR

First Semester

Scales: All major scales in three octaves. All major arpeggios (traids, broken chords, dominant chords.) Chromatic scales in three octaves. All major scales in thirds sixths octaves and tenth.

Studies: Six studies (one memorized) from the following books; Gavines, Dont Op. 35, Vieuztemps, Weinawski, Paganinni.

Second Semester

Scales: All major scales in three octaves. All major arpeggios (triads, broken chords, dominant and diminished seventh chords.) All minor scales in thirds, sixths, octaves and tenth.

Sonata: One entire Bach sonata for violin alone, Nos. 3, 4, or 5.

PUBLIC VIOLIN RECITAL

THEORETICAL REQUIREMENTS LEADING TO THE DEGREE OF BACHELOR OF MUSIC IN VOICE CULTURE

First Year

A candidate for the degree of Bachelor of Music in Voice Culture with an applied major subject in voice, may elect to change the theoretical requirements for the degree in accordance with the following schedules:

- a. Study of voice and piano with choral practice.
- b. Harmony 1-2, 3-4, 5-6
- c. Solfeggio 1-2, 3-4, 5-6
- d. History of Music, 1-2, 3-4
- e. Composition 1-2, (Analysis)
- f. Composition 3-4, (Elective)
- g. Conducting 1-2
- h. Counterpoint 1-2, (Elective)

Second Year

- a. The theoretical requirements listed for the Bachelor of Music degree for voice students.
- b. The writing of a composition for at least four voices.
- c. The writing of a figure showing usual contrapuntal devices.
- d. The writing of same songs.
- e. Further study of English literature, language and other cultural subjects, and submission of an original thesis.
- f. Orchestration.
- g. Continuation of study of voices, (Candidate must pass board examination).

THEORETICAL REQUIREMENTS LEADING TO THE DEGREE OF BACHELOR OF MUSIC IN VIOLIN*First Year*

Counterpoint; other structural designs of the invention; free polyphonic forms. Canon; Fugue; Chamber music ensembles or others.

Composition: Development or Sonata forms; the string quartette, scoring for small orchestra. Modern harmony.

Second Year

Counterpoint: Double fugue, vocal fugue, concert fugue. Free polyphonic forms with special design. Chamber music ensembles.

Composition: The sonata for sole instrument, the symphony, the concerto, scoring for large orchestra.

REQUIREMENTS LEADING TO THE DEGREE OF BACHELOR OF MUSIC IN SCIENCE AND COMPOSITION

The degree of Bachelor of Music is granted with "applied music" as the major subjects and with composition as a secondary subjects, or for work in composition as a major subject.

For composition as a secondary subject for voice, piano and violin, the following are the works required.

- a. One movement in sonata form for one or more instruments.
- b. Fugue in at least five sections showing the usual contrapuntal devices.
- c. Songs or pieces for the instruments in which the candidate is majoring.
- d. The scoring of a composition for full orchestra. This composition need not be original work, but may be an orchestral arrangement of any suitable composition.

NOTE: It is understood that the foregoing work need not demonstrate originality in thematic material or talent in composition, but merely an understanding of the technique of the elements of composition, harmony, form counterpoint, and orchestration.

- e. Student is required to continue his major subject in applied music for one full year.

For composition as major subject, the following works are required:

- a. A string quartett in three movements.
- b. A double fugue.
- c. A symphonic poem of at least fifteen minutes duration for full orchestra.

GENERAL REQUIREMENTS

for the title leading to the Bachelor of Music

First Year

Academic Subjects

English 1

Review High School Physics (Physics A)

Modern language (French I)

Sociology 1

Second Year

Academic Subjects

Psychology 1

Acoustics (Physics 37)

English 11 and 12

Modern language (German I)

Philosophy 104

REGULATIONS CONCERNING STUDENTS

1. There shall be appointed by the Board of Regents, with the recommendation of the President of the University, a Dean of Women of the Conservatory of Music, who shall look after the interests of all women students in this Conservatory, and who shall report to the Director of the Conservatory of Music all matters and questions requiring disciplinary action.

2. Every student shall, from the day of his enrollment in the Conservatory consider himself bound by these regulations and subject to their application. He shall further consider himself obliged to carry out all orders given by the Director and the Faculty of the Conservatory.

3. Every student shall so conduct himself, in industry, obedience, and personal behavior as to reflect credit upon the Conservatory in which he is enrolled.

4. Upon the opening of classes, every student shall present himself with the equipment prescribed by his instructor for both class room work and home practice and study. All students are expected to keep their instruments in good repair and in tune.

Pupils must arrive punctually at their class rooms and attend classes regularly. They must not leave the class room before the close of the hour. Tardiness will be reported and frequent tardiness will be considered cause for punishment.

5. One of the primary duties of every pupil is his regular attendance at all classes in his schedule. Pupils shall devote themselves to their studies with the utmost attention and zeal, and observe the rules of order

in their classes. Whispering, restlessness, inattention, or disobedience shall be considered cause for dismissal from the class. No pupil shall be excused from class except under unusual circumstances.

6. Pupils who absent themselves from classes will be reported to the Director. Excuses must be presented before the beginning of the lesson. Repeated and unexcused absences may lead to expulsion from the Conservatory. In case of illness, a notification must be sent to the Director immediately, if possible, before the lesson. The teacher and the Director have the right to ask for a certificate signed by the parent or guardian, or the physician of the student.

7. Regulations Nos. 2, 3, and 4 apply to ensemble rehearsals and Conservatory lectures, which are to be considered as part of the student's work.

8. All pupils are required to pass annual and final examinations in their major subject and in all prescribed compulsory subjects. Pupils who are absent from one or more examinations without sufficient excuse, may be expelled from the Conservatory.

9. Pupils may borrow music or books from the Conservatory Library with the consent of their teachers. All such loans must be reported. Loans may not extend over a period of two weeks. Pupils shall reimburse the Conservatory for any damage or loss.

10. Notices posted on the bulletin board in the Conservatory are considered personally addressed to each individual pupil. Pupils are, therefore, required to read these notices carefully every day.

11. Every pupil must report his address to the office, and any change of address must be reported within two days.

12. All property, instruments, etc., belonging to the Conservatory that are used by pupils must be treated with care and returned in good condition.

Practicing in the classrooms is permitted only with the consent of the Director.

Cost of repairs and depreciation incident to constant use of instruments or other material shall be defrayed by the Conservatory. On the other hand, any damage to property of the Conservatory caused by a pupil must be paid for by said pupil.

13. Infringements of the regulation governing the conduct of students shall be punished by the following disciplinary measures: (a) Preliminary warning, (b) Drastic warning, (c) Temporary dismissal from class, (d) Threat of expulsion, and (e) Expulsion from the Conservatory, public notice of same to be posted on the bulletin board.

The preliminary warning may be issued by any member of the faculty.

The drastic warning shall be given by the Director in his office and reported in the official records of the Conservatory.

Temporary dismissal from class shall be ordered by the Director and reported in the official records.

Threat of expulsion shall be made by the Director after consultation with the faculty and an investigation, report of which shall be signed by the pupil in question.

Punishments incurred under Rules 2, 3, and 4 shall be recorded officially.

Expulsion from the Conservatory can take place only upon the decision of the faculty.

Threat of expulsion, temporary dismissal from class, and expulsion must all be reported to the parents or guardians of the pupil concerned.

The above disciplinary measures shall as a rule be enforced by degrees. In aggravating circumstances, the more severe punishments may be decreed upon the commitment of the initial offense. Especially in cases of moral impropriety and insubordination, immediate suspension from class, to be followed by expulsion, may be ordered.

No pupil who has been expelled from the Conservatory can ever be re-admitted.

Pupils are subject to these regulations governing their conduct during vacation periods as well as during the school year.

14. After their departure from the Conservatory, pupils who have given complete satisfaction in point of industry, progress, and proper behavior in every respect will receive assistance from the Conservatory in the pursuit of their artistic careers to the fullest extent possible.

15. Every pupil enrolled in the Conservatory shall be given a copy of these Regulations, receipt for which is to be signed.

The School of Fine Arts

ADMINISTRATIVE OFFICERS

President of the University: Dr. RAFAEL PALMA.

Director: Prof. FABIAN DE LA ROSA.

Secretary: Dr. TORIBIO HERRERA.

BUSINESS DIRECTORY

OFFICE OF THE DIRECTOR: The office of the Director is located at No. 1001 Calle California, Ermita.

TELEPHONE CONNECTION; TELEPHONE No. 56921; Local 16.

CORRESPONDENCE: Address all correspondence to the Director, School of Fine Arts, University of the Philippines, California St., Ermita Manila, P. I.

FACULTY OF INSTRUCTION

FABIAN DE LA ROSA,

Director of the School of Fine Arts, Assistant Professor of Color and Composition and Portrait.

TORIBIO HERRERA, M.D.,

Secretary of the School of Fine Arts and Instructor in the History of Art.

FERNANDO C. AMORSOLO,

Instructor in Landscape and Drawing from Life.

AMBROSIO MORALES,

Instructor in Engraving and Elementary Drawing.

VICENTE FRANCISCO,

Instructor in Sculpture and Molding.

VICENTE RIVERA Y MIR,

Instructor in Decorative Art.

TEODORO BUENAVENTURA,

Instructor in Drawing from Antique and Drapery and Still-Life.

RAMON PERALTA,

Instructor in Elementary Drawing.

GUILLERMO TOLENTINO,

Instructor in Sculpture.

IRENEO L. MIRANDA,

Assistant Instructor in Illustration, Cartooning and Commercial Designing, and Elementary Decorative Painting.

PABLO AMORSOLO,

Assistant in Drawing from Life.

THE SCHOOL OF FINE ARTS

HISTORY

The School of Fine Arts was established by authority of Act No. 1870, founding the University of the Philippines which was enacted by the First Philippine Legislature on June 18, 1908. The first session of this school began in June, 1909. The building is situated at No. 1001 Calle California, Ermita, Manila.

OBJECT

The School of Fine Arts has as its chief object the teaching and development of the graphic and plastic arts in their various and manifold branches. An effort is made also to exert an influence toward the advancement and refinement of those industrial trades which are of an artistic nature; as, gold and silver work, ceramics, embroidery, lace-making, furniture making, and metal work.

INSTRUCTION

The School offers courses of instruction in Illustration, Cartooning and Commercial Designing, Painting, Sculpture, and Engraving.

REQUIREMENTS FOR ADMISSION

Applicants are admitted to the School of Fine Arts on the following bases:

1. They are required to present Bureau of Education Form No. 137, or similar forms of recognized private schools showing completion of the various intermediate school courses prescribed by the Bureau of Education of the Philippine Islands or equivalent courses in foreign schools.

2. By competitive examinations as vacancies occur. In the regular courses, excepting those of theoretical nature, thirty to forty students shall be the maximum number to be enrolled. A limited number of elementary students who show marked proficiency in drawing are admitted.

For further particulars apply to the Director, School of Fine Arts, University of the Philippines.

REQUIREMENTS FOR GRADUATION

Those pupils who complete satisfactorily the work as outlined for the courses in Illustration, Cartooning and Commercial Designing; Painting; Sculpture; and Engraving, and who can present certificate of having satisfactorily completed the second year courses required in public high schools, or its equivalent, are recommended for graduation.

TUITION FEES AND OTHER EXPENSES

The tuition fee in the School of Fine Arts is ₱6 a semester for the Elementary Course, and ₱15 a semester for the Advanced Course. The miscellaneous fees charged in this school are: Library, ₱5 a year; Medical, ₱2 a semester; Athletic, ₱1.50 a semester; Philippine Collegian, ₱1 a semester. An entrance fee of ₱5 is also charged upon the student's admission to the University. For further information regarding fees, see page 35 and following.

Furniture absolutely necessary for the work is provided by the School; but instruments and all other materials for work—books, papers, pigments, canvas, etc.—must be provided at the student's own expense.

ATTENDANCE

Promptness and regularity of attendance are required in all day and evening classes. Each student is expected to conduct himself at all times, both in and out of the classroom, with honor to himself and to his fellow students, and to the School of Fine Arts. Each student upon entering the School assumes the obligation to meet these requirements.

Student membership will be withdrawn from any one who does not prove to be industrious, and who fails in the common courtesies necessary for the harmonious conduct of the work of the School.

EXAMINATIONS AND PRIZES

Three days before the close of the school year there will be an exhibition of the work done by the pupils which, in the opinion of the instructors of this school, deserves to be exhibited. Prizes will be awarded, and the qualifications of each pupil will be determined by various committees of instructors appointed for this purpose. Each committee is composed of the instructor of the class the work of which is to be judged, and two others who are appointed to assist him with their advice; these boards determine the qualifications and award the prizes. In each class there will be given as prizes a bronze medal with appropriate diploma, certificates of honorable mention. In addition, a certificate of merit is given, in lieu of the medal, to any pupil who has previously been awarded a medal in the same class; provided that the character of his work again deserves this distinction.

FINAL DISPOSITION OF THE WORK OF STUDENTS

All works for which the pupil are awarded prizes shall be retained for school model. The owner or the author of such works loses his right of ownership. The rest of the work of the students done during the academic year and adjudged by the faculty as deserving of special merit, with the consent of the owners, shall be offered for sale to the public in general at prizes fixed by the students and the faculty. From the proceeds of the sales, 50 per cent shall be retained by the University to be applied to the acquisition of more equipment for the School, the rest to be given to the owners of the work.

RECORDS AND PROMOTIONS

At the end of each semester the completed work of each student is reviewed and graded by the professor in charge and a record of this review will be kept on file.

Promotions are made at the end of each academic year upon completion of the required work.

ORGANIZATION OF COURSES

The entire course of instruction is arranged for four years in Illustration, Cartooning and Commercial Designing and five years in Painting, Sculpture, and Engraving. In each department, the required course is divided into two parts, preparatory and principal courses.

The Preparatory Course covers one year and shall be common for the four branches; that is, the student must satisfy his instructor with his work in Elementary Drawing which is a prerequisite to his admission to any of the principal courses.

The course in Elementary Drawing will comprise chiefly charcoal practice of figures, landscape, animals, ornaments and low and high reliefs. The work is intended to familiarize the student with the technique of drawing from life.

The classes are conducted under the "Atelier and Concours system"; that is, the instruction is given in groups under the particular instructor. The "Atelier system" may include one or several classes; each one of which is limited in number, life classes with 20 to 35 students.

In the Regular Courses, there are three life-classes in Painting; one in Engraving; one in Sculpture; etc. in actual session. The students are carried through the work on the head, costumes, and the nude; the work ranging from early charcoal practice of academic studies from the nude to advanced executions in painting, modeling and composition. The scientific and artistic study of figures is fully provided for.

CURRICULA AND COURSES IN THE SCHOOL OF FINE ARTS:

THE GENERAL PREPARATORY CURRICULUM

<i>First Semester</i>	<i>Hours</i>	<i>Second Semester</i>	<i>Hours</i>
100-Elementary Freehand Drawing and Modeling	20	100-Elementary Freehand Drawing and Modeling	20

THE FOUR-YEAR CURRICULUM IN PAINTING

<i>First Year</i>			
101-Draperly	10	101-Draperly	10
105-Oil Painting from Still-life	10	105-Oil Painting from Still-life	10
109-Advanced Freehand Drawing	10	109-Advanced Freehand Drawing	10

Second Year

106 Advanced Oil Painting 1 ..	10	106 Advanced Oil Painting 1 ..	10
113 Landscape Painting 1	10	113 Landscape Painting 1	10
110 Drawing from Life 1	10	110 Drawing from Life 1	10
116 Artistic Anatomy	3	116 Artistic Anatomy	3
102 Decorative Art	10	102 Decorative Art	10

Third Year

107 Advanced Oil Painting 2 ..	10	107 Advanced Oil Painting 2 ..	10
117 Perspective	2	117 Perspective	2
114 Landscape Painting 2	10	114 Landscape Painting 2	10
103 Advanced Decorative Art		103 Advanced Decorative Art	
1	10	1	10

Fourth Year

108 Advanced Oil Painting 3 ..	10	108 Advanced Oil Painting 3 ..	10
104 Advanced Decorative Art		104 Advanced Decorative Art	
2	10	2	10
115 Advanced Landscape Paint-		115 Advanced Landscape Paint-	
ing 3	10	ing 3	10
118 History of Art	5	118 History of Art	5
112 Drawing from Life 3	10	112 Drawing from Life 3	10

THE FOUR-YEAR CURRICULUM IN SCULPTURE

First Year

124 Modeling from Antique ..	6	124 Modeling from Antique ..	6
128 Ornamental Composition ..	4	128 Ornamental Composition ..	4
109 Advanced Freehand Draw-		109 Advanced Freehand Draw-	
ing	10	ing	10

Second Year

125 Bas-relief Modeling from		125 Bas-relief Modeling from	
Life	6	Life	6
129 Composition in Bas-re-		129 Composition in Bas-re-	
lief	4	lief	4
116 Artistic Anatomy	3	116 Artistic Anatomy	3
110 Drawing from Life 1	10	110 Drawing from Life 1	10

Third Year

117 Perspective	2	117 Perspective	2
126 Modeling from Life	6	126 Modeling from Life	6
130 Composition	4	130 Composition	4
111 Drawing from Life 2	10	111 Drawing from Life 2	10

Fourth Year

127 Advanced Modeling from		127 Advanced Modeling from	
Life	6	Life	6
131 Advanced Composition ...	4	131 Advanced Composition ...	4
118 History of Arts	5	118 History of Arts	5
112 Drawing from Life 3 ...	10	112 Drawing from Life 3 ...	10

THE FOUR-YEAR CURRICULUM IN ENGRAVING

First Year

124 Modeling from Antique ..	6	124 Modeling from Antique ..	6
128 Ornamental Composition ..	4	128 Ornamental Composition ..	4
109 Advanced Freehand		109 Advanced Freehand	
Drawing	10	Drawing	10

Second Year

124 Bas-Relief Modeling from Life	6	124 Bas-Relief Modeling from Life	6
129 Comp. in Bas-Relief	4	129 Comp. in Bas-Relief	4
116 Artistic Anatomy	3	116 Artistic Anatomy	3
110 Drawing from Life 1	10	110 Drawing from Life 1	10

Third Year

132 Bronze Engraving from Antique	6	132 Bronze Engraving from Antique	6
134 Comp. in Relief	4	134 Comp. in Relief	4
117 Perspective	2	117 Perspective	2

Fourth Year

133 Portrait Engraving in Bronze (Model)	6	133 Portrait Engraving in Bronze (Model)	6
135 Advanced Comp. in Relief (Bronze)	4	135 Advanced Comp. in Relief (Bronze)	4
118 History of Arts	5	118 History of Arts	5
112 Drawing from Life 3	10	112 Drawing from Life 3	10
139 Engraving Machine Practice. Once a month		139 Engraving Machine Practice. Once a month	

THE THREE-YEAR CURRICULUM IN ILLUSTRATION, CARTOONING AND COMMERCIAL ENGRAVING

First Year

101 Drapery	10	101 Drapery	10
119 Illustrative Design	10	119 Illustrative Design	10
116 Artistic Anatomy	5	116 Artistic Anatomy	3
109 Advanced Freehand Drawing	10	109 Advanced Freehand Drawing	10

Second Year

120 Commercial Design	10	120 Commercial Design	10
122 Cartooning	10	122 Cartooning	10
117 Perspective	2	117 Perspective	2
113 Landscape Painting 1	10	113 Landscape Painting 1	10
110 Drawing from Life 1	10	110 Drawing from Life 1	10

Third Year

121 Advanced Illustrative and Commercial Design	10	121 Advanced Illustrative and Commercial Design	10
123 Advanced Cartooning	10	123 Advanced Cartooning	10
118 History of Arts	5	118 History of Arts	5
111 Drawing from Life 2	10	111 Drawing from Life 2	10
114 Landscape Painting 2	10	114 Landscape Painting 2	10

THE ONE-YEAR POST-GRADUATE COURSE IN PAINTING

108 Advanced Oil Painting 3 ..	10	108 Advanced Oil Painting 3 ..	10
136 Thesis Design	10	136 Thesis Design	10
112 Drawing from Life 3	10	112 Drawing from Life 3	10

THE ONE-YEAR POST-GRADUATE COURSE IN SCULPTURE

138 Life-Size Modeling from Life	6	138 Life-Size Modeling from Life	6
137 Thesis Sculpture Comp ...	4	137 Thesis Sculpture Comp ...	4
112 Drawing from Life 3	10	112 Drawing from Life 3	10

REQUIREMENTS FOR GRADUATION

For Undergraduate Courses.

Those pupils who complete satisfactorily the work as outlined for the courses in Illustration, Cartooning and Commercial Designing; Painting; Sculpture and Engraving; and who can present certificate of having satisfactorily completed the second year courses required in public high schools, or its equivalent, are recommended for graduation.

For Graduate Courses

To meet the requirements for obtaining the Post Graduate Diploma the student must satisfy the faculties that he or she is qualified for teaching in art schools, in addition to completion of the prescribed courses.

DESCRIPTION OF COURSES.

100. ELEMENTARY FREEHAND DRAWING AND MODELING:

An elementary course in the principles and practice of drawing by free-hand. Emphasis upon proportion, perspective and values in monochrome. Also, all students are required to do some modeling in connection with the classes in beginning drawing.

Common to all courses.

Instructors

- 1. R. PERALTA
- 2. Vacant
- 3. Vacant
- 4. Vacant

101. DRAPERY: This course deals with painting from draperies worn by living models. This is for the whole school year. The purpose of the course is the development of the color sense and ability in the technique of painting draperies.

First Year, Painting, Illustration, Cartooning and Commercial Designing.

10-hour laboratory Period each week. Prerequisites F. A. 100.

Instructor (Vacant) Two Semesters.

102. DECORATIVE ART: This course is a connection of Water-Color Painting (F. A. 101) dealing with the study of human figure from living model with or without drapery in combination with scenic decorative, compositions, giving due attention to stylization. Materials: Oil, pastel, tempera and water color.

Second Year, Painting 1, 10-hour laboratory period each week, Prerequisites F. A. 101 and F. A. 105.

MR. L. L. MIRANDA
Two semesters.

103. *ADVANCED DECORATIVE ART (1)*. A continuation of F. A. 102 with advanced problems in decorative art.

Third Year, Painting, 10-hour laboratory period each week.

Prerequisite F. A. 102.

MR. V. RIVERA Y MIR

Two semesters.

104. *ADVANCED DECORATIVE ART 2*. A still advance course in decorative art, and is a continuation of F. A. 103, dealing in decorative compositions.

Fourth Year, Painting, 10-hour laboratory period each week,

Prerequisite F, A. 103,

MR. V. RIVERA Y MIR

Two semesters.

105. *OIL PAINTING FROM STILL-LIFE*. This course is designed to train the students in painting in oil from still-life, the object of which is to develop the color sense acquire the directness of presentation.

First Year, Painting, Illustration, Cartooning and Commercial Designing. 10-hour laboratory period each week.

MR. T. BUENAVENTURA

Two semesters.

106. *ADVANCED OIL PAINTING 1*. Painting in oil of fragments of nude and costumed living models in the first semester. In the second complete human figure the purpose of which is to develop the study of coloring from life.

Second Year, Painting. Prerequisite F. A. 105 and F. A. 109

10-hour laboratory period each week.

MR. PABLO AMORSOLO

Two semesters.

107. *ADVANCED OIL PAINTING 2*. Students are required to paint in oil from living nude and costumed models, half and full figures, and in groups, to develop the color sense in oil technique.

Third Year, Painting. Prerequisite F. A. 106

10-hour laboratory period each week.

MR. V. RIVERA Y MIR

Two Semesters.

108. *ADVANCED OIL PAINTING 3*. The course is a continuation of F. A. 107 with advance problems in picture and portrait making with particular regard to composition and harmony of color.

Senior Year Painting. Prerequisite F. A. 107

10-hour laboratory period each week.

PROF. DE LA ROSA

Two Semesters.

109. *ADVANCED FREEHAND DRAWING.* A course to familiarize the student in the study of forms and expression of human figure by free-hand drawing of cast models from antique statuary.

First Year Painting, Sculpture, Engraving and Illustration, Cartooning and Commercial Designing. Prerequisite F. A. 100. 10-hour laboratory period each week.

Mr. T. BUENAVENTURA
Mr. A. MORALES
Two Semesters.

110. *LIFE DRAWING 1.* A study of charcoal drawing from living nude or costumed models to appreciate life. The course includes outdoor sketches from living figures once a week to develop rapid sketching once from life.

Second Year. Common to all courses, Prerequisites
F. A. 109. 10-hour laboratory period each week.

Mr. (Vacant)
Two Semesters.

111. *LIFE DRAWING 2.* A continuation of Drawing from Life 1. (F. A. 110)

Third year. Common to all courses. Prerequisite, F. A. 110.
10-hour laboratory period each.

Mr. F. AMORSOLO
Two Semesters.

112. *LIFE DRAWING 3.* A combined class with Life Drawing 2 (F. A. 111) but students may use water-color, oil, pastel or crayon, as the instructor may require. Still advance. Sketches once a week is required, as F. A. 110 and F. A. 111.

Senior Year. Common to all courses. Prerequisite F. A. 111
10-hour laboratory period once a week.

Mr. F. AMORSOLO
Two semesters.

113. *LANDSCAPE PAINTING 1.* The course trains the student to paint in oil appropriate sector of a given landscape. The instruction is elementary in nature.

Second Year Painting and Illustration, Cartooning and Commercial Designing. Prerequisite F. A. 110. 10-hour laboratory period each week.

(Vacant)
Two Semesters.

114. *LANDSCAPE PAINTING 2.* This class is also conducted in open localities selected by the instructor, and an advance continuation of

F. A. 113 dealing in painting of selected sceneries, designed particularly in the development of individual technique and style in mastering landscape composition.

Third Year Painting. Prerequisite F. A. 102 and F. A. 113. 10-hour laboratory period each week.

MR. F. AMORSOLO
Two Semesters.

115. *ADVANCED LANDSCAPE PAINTING*. This class is also outside locality, and an advance continuation of F. A. 114, but still advanced.

Fourth Year Painting. Prerequisite F. A. 114 and F. A. 107 10-hour laboratory period each week.

MR. F. AMORSOLO
Two Semesters.

116. *ARTISTIC ANATOMY*. This course consists of lectures and recitations treating chiefly of the study of bones and muscles, and the factors that determine the form, expression and proportion. It will be illustrated by demonstration on the living model.

Second Year. Common to all courses. Three-hour recitation period each week.

DR. T. HERRERA
Two Semesters.

117. *PERSPECTIVE*. Lectures on elementary principles of the science of perspective, accompanied by drafting in the classroom in the application of these principles. This is for the first semester. For the second, Drawing and shading of objects in perspective.

Third Year Painting, Sculpture and Engraving. Second Year Illustration, Cartooning and Commercial Engraving.

118. *HISTORY OF ART*. Illustrated lectures on evolution of all major arts, such as painting, sculpture and architecture with emphasis on the great schools of painting, sculpture and great styles of architecture. Analysis on the masterpieces of painting with reference to form and massing; and architecture with reference to design, practicability and the styles used.

Senior Year. Common to all courses. Three times a week.

DR. T. HERRERA
Two Semesters.

119. *ILLUSTRATIVE DESIGN*. The course treats of practice in illustrative drawing with special reference to the study of the technique of pen and ink, pencil, wash and other mediums necessary.

First Year Illustration, Cartooning and Commercial Designing. 10-hour laboratory period each week. Prerequisite F. A. 100.

MR. L. L. MIRANDA
Two Semesters.

120. *COMMERCIAL DESIGN*. This class also deals with the study of the basis of lettering styles and the arrangement of the same for advertising and book designs.

Second Year, Illustration, Cartooning and Commercial Designing 10-hour laboratory period each week. Prerequisite F. A. 119

Mr. L. L. MIRANDA
Two Semesters.

121. *ADVANCED ILLUSTRATIVE AND COMMERCIAL DESIGN*. It is a course of advanced illustrative and advertising design. It gives also practical technique in black and white color compositions. Reference is made to the process of reproduction, color making and composition as basis. It is a technical study of design from the commercial standpoint.

Third Year. Illustration, Cartooning and Commercial Designing. 10-hour laboratory period each week. Prerequisite F. A. 120.

Mr. L. L. MIRANDA
Two Semesters.

122. *CARTOONING*. This class deals in cartooning in pencil, pen, and ink, and wash as applied to newspapers, magazines, posters for advertising, etc. Serial cartoons are developed and individual style is encouraged.

Second Year, Illustration, Cartooning and Commercial Designing. 10-hour laboratory period each week. Prerequisite F. A. 109 and 119.

Mr. L. L. MIRANDA
Two Semesters.

123. *ADVANCED CARTOONING*. This is a continuation of F. A. 122 but evolving into much more complex problems such as drawing from life and composition.

Third Year. Illustration, Cartooning and Commercial Designing. 10-hour laboratory period each week.

Prerequisite F. A. 122.

Mr. L. L. MIRANDA
Two Semesters.

124. *MODELING FROM ANTIQUE*. The course treats of modeling from antique statuary. It is divided into two semesters. In the first semester, it consists of modeling of fragments and plasters cast, and in the second, it deals with the modeling of full figure, also from antique statuary to the round.

First Year Sculpture. 6-hour laboratory period each week.

Prerequisite. F. A. 110.

MR. G. E. TOLENTINO
Two Semesters.

125. *BAS-RELIEF MODELING FROM LIFE*.— The course is divided into two semesters. Modeling of fragments only from living models

in relief of medallion for the first semester, and modeling from nude or costumed living figures with pictorial effect in full-size figure in the second.

Second Year Sculpture and Engraving.

6-hour laboratory each week. Prerequisite F. A. 109.

MR. V. FRANCISCO

Two Semesters.

126. *MODELING FROM LIFE*...The work consists of clay modeling from living nude. The course is divided into two semesters, (a) First semester, head only to the round, and (b) second semester, whole figure to the round.

Third Year Sculpture. 6-hour laboratory period each week.

Prerequisite F. A. 125.

MR. V. FRANCISCO

Two Semesters.

127. *ADVANCED MODELING FROM LIFE*. An advanced course in sculpture. It consists of clay modeling in full round from nude or costumed living models. The model is placed in the center of the class upon a rotary platform to enable the student to obtain a full view of the model, without leaving his place. The course includes advance process involved in the production of sculpture.

Fourth Year Sculpture. 6-hour laboratory period each week. Prerequisite F. A. 126.

MR. G. E. TOLENTINO

Two Semesters.

128. *ORNAMENTAL COMPOSITION*. This is an advanced course in ornamental modeling requiring students to model ornamental compositions in relief upon a given subject of typical importance.

First Year Sculpture and Engraving.

4-hour laboratory period each week.

Prerequisite F. A. 100.

MR. G. E. TOLENTINO

Two Semesters.

129. *COMPOSITION IN BAS-RELIEF*. Continuation of F. A. 128
Second Year Sculpture and Engraving.

4-hour laboratory period each week.

Prerequisites F. A. 128.

MR. V. FRANCISCO

Two Semesters.

130. *COMPOSITION*. The students are required to model original compositions prescribed by the instructor.

Third Year Sculpture.

4-hour laboratory period each week.

Prerequisite F. A. 110, 129 and 116.

MR. V. FRANCISCO

Two Semesters.

131. *ADVANCED COMPOSITION*. A continuation of F. A. 130.
Fourth Year Sculpture.
4-hour laboratory period each week.
Prerequisite F. A. 111 and F. A. 130

MR. G. E. TOLENTINO
Two Semesters.

132. *BRONZE ENGRAVING FROM ANTIQUE*. The work consists in direct carving in bronze of copies of original cast models made by the students themselves for the purpose of making the negatives from which the positive may later be made.

Third Year Engraving
6-hour laboratory period each week.
Prerequisites, F. A. 100.

MR. A. MORALES
Two Semesters.

133. *PORTRAIT ENGRAVING IN BRONZE (MEDAL)*. The work consists of carving in bronze from life in the form of medals.

Fourth Year Engraving.
6-hour laboratory period each week.
Prerequisite F. A. 132.

MR. A. MORALES
Two Semesters.

134. *COMPOSITION IN RELIEF IN BRONZE*. The students in this class are required to make wax medals of original compositions, obtain the cast of their finished models and finally copy their cast models in bas-relief in bronze.

Third Year Engraving
4-hour laboratory period each week.
Prerequisite F. A. 128.

MR. A. MORALES
Two Semesters.

135. *ADVANCED COMPOSITION IN RELIEF (BRONZE)*. An advanced continuation of F. A. 134.

Fourth Year Engraving
4-hour laboratory period each week.
Prerequisite F. A. 134.

MR. A. MORALES
Two Semesters.

136. *THESIS DESIGN*. The course requires the student to present sketches of scientific productive imagination based on research once a month with the aim in view of producing a masterpiece in painting at the end of the course.

Post Graduate—Painting

Once a month

Prerequisite—must be a graduate student.

PROF. DE LA ROSA

Two Semesters.

137. *THESIS SCULPTURE COMPOSITION*. The method of instruction is the same as F. A., 136 with the aim of requiring students to present a master-piece in sculpture at the end of the course.

Post Graduate—Sculpture.

Once a month

Prerequisite—must be a graduate student.

MR. G. E. TOLENTINO

Two Semesters.

138. *LIFE-SIZE MODELING FROM LIFE*. The course requires the graduate students to model from life, both with or without drapery, combined with the senior undergraduate students in sculpture, but making a life-size sculpture.

Post Graduate—Sculpture

10-hour laboratory period each week

Prerequisite—Must be a graduate student

MR. G. E. TOLENTINO

Two Semesters.

139. *ENGRAVING MACHINE PRACTICE*. The course is designed in order to familiarize the students with the technique of reducing the first model to the size required. This is in connection with the practical side of business engraving.

Senior Year Engraving.

Once a month laboratory period

Prerequisite must be senior

MR. A. MORALES

Two Semesters.

INDEX

A

	Page
Academic costume	45
Academic load	102
Accounting courses in	174
Administrative law	310
Administrative officers	7
*Colleges and schools	8
Admiralty	311
Admission to advanced standing: ..	31
Admission to College of Medicine ...	343
Advisers, faculty:	
College of Agriculture	455
College of Education	226
College of Engineering	270
College of Liberal Arts	102
Agency	309
Agricultural Chemistry courses in...	462
Agricultural Education, courses in...	466
Agricultural Engineering, courses in..	468
Agronomy, courses in	472
*Ambulatory clinic	516
Anatomy, courses in	357
Animal Husbandry, courses in....	477, 517
Animal Husbandry and Veterinary curriculum combined	495
Anthropology, courses in	112
Arboriculture	533
Attendance, rules on	38
Athletic association	34

B

Bacteriology, courses in	360
Baker Memorial Professorship	452
Bailments and carriers	310
Banking, courses in	179
Bankruptcy and insolvency	312
Bar examination rules	326
Biochemistry, courses in	359
Biology majors, College of Educa- tion	232
Board of Regents	10
Botany, courses in	115
Business Administration, courses in...	182

C

C. P. A. Course	171
Calendar	4
Caps, gowns, tassels and hoods	45
Cartooning, courses in	612
Certificates	43

In agricultural education	497
*Charter	15
Chemistry, courses in	119
Chemistry curriculum	109
Chorus, Conservatory	589
Civil Engineering, courses in	277
Civil Procedure	311
Clinical facilities (Medicine)	342
Code review	314-16
Colleges and schools:	
Business Administration	167
College of Agriculture	443
College of Education	223
College of Engineering	259
College of Law	303
College of Liberal Arts	85
College of Medicine	333
College of Veterinary Science....	501
Conservatory of Music	563
Junior College	201
Northern Luzon Junior Col- lege	535
Rural High School	499
School of Fine Arts	601
School of Forestry	521
School of Hygiene and Public Health	411
School of Pharmacy	385
School of Surveying	294
Combined Liberal Arts-Medicine course	108
Commencement exercises	46
Commercial Designing, courses in...	612
Common first-year	105
Composition curriculum (Music)	584
Conditions and failures	33
Constitutional Law	312
Conveyancing	314
Corporations:	
Private	311
Public	312
Council, the University	11
*Credits	32
Summer School	62
Criminal:	
Law	308
Curricula:	
College of Agriculture	494
College of Education	230
College of Engineering	291
College of Law	316
College of Medicine	354

	Page		Page
College of Veterinary Science....	519	Philosophy	152
Junior College, Cebu	219	*Physical Education	73
*Military Science	70	Physics	154
Northern Luzon Junior College ..	548	Physiology and Biochemistry	359
Physical Education	76	Plant Pathology	484
School of Business Administra- tion	173	Plant Physiology	485
School of Fine Arts	605	Political Science	159
School of Forestry	528	Psychology	248
School of Hygiene and Public Health	424	Rural Economics	488
School of Pharmacy	396	Rural High School	500
School of Surveying	297	Soils	489
University High School	256	Spanish	162
		Sugar Technology	464
		Surgery	371
		Veterinary Anatomy	508
		Veterinary Hygiene	516
		Veterinary Medicine	514
		Veterinary Pathology and Bacterio- logy	511
		Veterinary Pharmacology and Phy- siology	510
		Veterinary Surgery	513
		Zoology	163
		Deposits	37
		Dermatology and Syphilology, courses in	370
		Discipline:	
		College of Liberal Arts	102
		Military Science	67
		Drawing (Engineering)	275
		Drawing (Fine Arts)	610
		E	
		Economics, courses in	187
		Economics majors (Education)	233
		Education, Courses in	244
		Electrical Engineering courses in ...	286
		Elementary law	307
		Elementary law	309
		Elementary procedure	309
		*Engineering lectures	275
		English:	
		Courses in	125, 184
		Majors (Education)	234
		Engraving, Courses in	
		Enrollment and requirements (Mili- tary Science)	65
		Ensemble courses	587
		Entomology, courses in	481
		Entrance:	
		Deficiency	26
		Examination:	
		Conservatory of Music	567
		Type A	27
		Type B	27
		Requirements—	
		College of Agriculture	26
		College of Education	25
		College of Law	25
		College of Medicine	25
Degrees	43		
Dendrology, courses in	529		
Departments of Administration and Instruction	32		
Departments:			
Agricultural Chemistry	462		
Agricultural Education	466		
Agricultural Engineering	468		
Agronomy	472		
Anatomy	356		
Animal Husbandry	477, 517		
Anthropology and Sociology	111		
Botany	115		
Chemistry	119		
Civil Engineering	277		
Economics	187		
Education	244		
Electrical Engineering	286		
English	125		
Entomology	481		
French	149		
Geology and Geography	130		
Gynecology	380		
History	135		
Home Economics	250		
Hygiene	364		
Legal Medicine	381		
Library Science	138		
Mathematics	144		
Mechanical Engineering	282		
Medicine	367		
Military Science and Tactics	64		
Modern Languages	149		
Obstetrics	375		
Operative and Clinical Dentis- try, Ophthalmology, Otology, Rhinology, and Laryngology	379		
Oriental Languages	150		
Pathology and Bacteriology	360		
Pediatrics	376		
Pharmaceutical Chemistry	404		
Pharmacology	363, 408		
Pharmacy	406		

	Page
Conservatory of Music	26
General	24
Graduate Department	48
School of Fine Arts	26
School of Forestry	26
School of Hygiene and Public Health	26
Summer School	63
University High School	256
Equipment:	
Civil Engineering	263
Electrical Engineering	262
Mechanical Engineering	261
Department of Physical Education	74
Evidence	312
Exemption (Military Science)	66, 99
*Experiment Station (Agriculture) ..	452
Extraordinary Legal Remedies	313
F	
Faculty:	
College of Agriculture	444
College of Education	224
College of Engineering	260
College of Law	304
College of Liberal Arts	86
College of Medicine	335
College of Veterinary Science....	502
Conservatory of Music	564
Department of Physical Education	73
Junior College (Cebu)	202
School of business Administration	168
School of Fine Arts	602
School of Forestry	522
School of Hygiene and Public Health	411
School of Pharmacy	386
University High School	255
Fees:	
Laboratory (Engineering)	269
Miscellaneous	36
Refund of	38, 100
Summer School	63
Tuition and laboratory	35
Field artillery branch	71
Foreign trade	194
Forest Engineering	531
French, courses in	149
G	
Galenical preparations	406
General:	
Cultural courses	104
Science major (Education)	235
General information	20
Geography, courses in	133
Geology, courses in	130

	Page
German, courses in	149
Gown	45
Grades	33
*Graduate Study	47, 317
Graduation requirements, General....	43
College of Law	307
College of Liberal Arts	104
Conservatory of Music	594
Graduate Study	50
Graduation with honors	
Gynecology, courses in	380
H	
Health Education:	
Courses in	252
Major (Education)	236
High School, University	255
Histology, courses in	357
Historical sketch, University	20
History:	
Courses in	135
Major (Education)	237
Home Economics:	
Courses in	250
Major (Education)	238
Honors and prizes (Law)	328
Hood	46
Hospital and college buildings (Medicine)	341
Hygiene, courses in	365
I	
Infantry branch	70
Infirmary, University	100
Institutes of civil law	307
Insurance	313
L	
Laboratory facilities Engineering ...	261
Land registration and mortgages....	315
Laryngology, courses in	379
Legal: ethics, medicine	314, 315
Library:	
Bureau of Science	61
National	60
Science:	
Courses in	133
Curriculum	110
Major (Education)	239
University:	
Main	57
College and school	57
Rules and regulations	59
M	
Master surveyor	296
Mathematics:	
Courses in	144
Major (Education)	240

Standing committees:	<i>Page</i>
Board of Regents	10
*University Council	13
Sugar Technology, courses in	464
Summer School	62
Summer surveying	263
Surgery, courses in	373
Surveying, courses in	300
Swimming requirements	76
Syphilology and Dermatology, courses in	370

T

Taxation	313
Thesis:	
Agriculture	461
Graduate	51
Thursday assembly (College of Law) .	330
Titles	43, 296
Torts and damages	310
Tuition and laboratory fees	35

V

Veterinary, courses in:	<i>Page</i>
Anatomy	508
Autopsy	512
Hygiene	516
Medicine	514
Parasitology	512
Pathology and bacteriology	511
Pharmacology and physiology ...	510
Surgery	513
Violin curriculum	591
Voice culture curriculum	592

W

Wills, Descent, and Administration...	311
Wood Technology, courses in	532

Z

Zoology, courses in	163
---------------------------	-----

